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A Study of the Effects of Fuel Switching on Catalyst Equipped Vehicles

Automotive Testing Labs., Inc.
Aurora, CO

Prepared for

Environmental Protection Agency
Ann Arbor, MI

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for the

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Each of the seven vehicles received a series of baseline tests, mileage accumulation tests using unleaded fuel, catalyst evaluation tests, mileage accumulation tests using leaded fuel and a final series of tests utilizing various combinations of fuel, catalyst status and oxygen sensor status.

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ABSTRACT

This work effort consisted of a series of emission and fuel economy tests on seven (7) 1979 vehicles designated by the Scope of Work. The objectives of this effort were 1) to assess the effect of operating a catalyst equipped vehicle on commercially available leaded fuel, 2) to evaluate the emission characteristics of the vehicle at a point where gross catalytic poisoning and stabilization had occurred, 3) to examine catalyst rejuvenation efforts, and 4) to examine misfueling and rejuvenation effects on the oxygen sensor for vehicles equipped with a three-way catalyst.

This work effort consisted of a series of engine status, driveability, emission and fuel economy tests on seven (7) 1979 vehicles from the loan vehicle fleet utilized in the Emission Factor program.

Testing was performed in St. Louis, Missouri during the period of May through December, 1979 and, after transport, in East Liberty, Ohio through June, 1980.

The testing program at the St. Louis location consisted of a 1975 Federal Test Procedure, a Federal Short Cycle Test, a Federal Three-Mode Test, a Two-Speed Idle Test and an undiluted exhaust measurement before and after the catalyst at idle and at 50 mph. Testing performed at the East Liberty location was modified to eliminate the Federal Short Cycle Test, to obtain before and after catalyst readings during the Federal Three-Mode Test and the Two-Speed Idle Test and to record temperatures before and after the catalyst for the steady state conditions during idle and 50 mph cruise.

Each of the seven vehicles received a series of baseline tests, mileage accumulation tests using unleaded fuel, catalyst evaluation tests, mileage accumulation tests using leaded fuel and a final series of tests utilizing various combinations of fuel, catalyst status and oxygen sensor status.

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1. INTRODUCTION

The United States Environmental Protection Agency (EPA) is designated under the provisions of the Clean Air Act as having responsibility for the control and prevention of air pollution. In order to fulfill these responsibilities the EPA designs, conducts and promotes surveys and studies of air pollution sources.

National programs to characterize and reduce air pollution from mobile sources are developed and implemented through EPA's Emission Control Technology Division (ECTD). Mobile emission control strategies developed by the ECTD are based, in part, on projections of nationwide motor vehicle emissions. These projections are derived from surveys designed to obtain emission data from representative samples of in-use vehicles. Included in the ECTD's responsibilities is the assessment of various in-use emission control devices.

In March of 1979, the EPA contracted with Automotive Testing Laboratories, Inc. (ATL) to perform a series of emission and fuel economy tests on seven catalyst equipped 1979 vehicles. This series of tests was designed to measure the effects of leaded fuel on emission levels, and to, subsequently, determine the effectiveness of catalyst and oxygen sensor rejuvenation through a return to unleaded fuel.

In addition to emission measurements, the contract also included requirements for measurement of catalyst skin temperatures, driveability evaluations, and engine performance comparisons.

The report describes the design and conduct of the project and presents the results of the test sequences performed.

2. TECHNICAL DISCUSSION

2.1 PROGRAM OBJECTIVES

This work effort was performed to provide information on the various levels of emissions produced through progressive poisoning of catalyst equipped vehicles through the use of commercially available leaded fuel.

Task objectives also included an evaluation of rejuvenation efforts after return to unleaded fuel and an examination of misfueling and rejuvenation effects on the oxygen sensor for vehicles equipped with three-way catalysts.

2.2 PROGRAM DESIGN

Testing was performed on a sample of seven 1979 catalyst equipped vehicles identified in the work effort. These vehicles were selected from the loan vehicle fleet utilized in an ongoing Emission Factor Program in St. Louis, Missouri and each vehicle was to have accumulated between 4,000 and 10,000 miles at the beginning of the project.

Vehicles selected for testing were as follows:

Veh. #	Make	Model	CID	Catalyst	Odometer
9401	Ford	Thunderbird	302	Oxidation	8316
9402	Ford	Thunderbird	302	Oxidation	9287
9403	Oldsmobile	Cutlass	260	Oxidation	6818
9404	Oldsmobile	Cutlass	260	Oxidation	7283
9405	Mercury	Marquis	351	Three-way	4179
9406	Volvo	245DL	130	Three-way	5795
9407	Chevrolet	Monza	151	Three-way	5182

Table 1, Summary of Test Vehicles

Upon arrival at the St. Louis laboratory, each vehicle was examined to insure that no extensive modifications had been performed and that the vehicle was safe to operate. The vehicles were prepared for testing and following a brief driveability evaluation, were placed in soak for a period between 12 and 24 hours.

A Maladjustment/Disablement inspection was performed prior to the initial as-received tests. During this examination each vehicle was inspected for modifications to the emission control system and maladjustments to basic engine parameters. Disabled and maladjusted components were identified and repaired at this time. Additionally, routine tune-up actions were performed, which included spark plug replacement, oil change, oil and air filter and PVC valve replacement. All vehicles were tuned to manufacturer and emission sticker specifications.

All vehicles received an Emission Component Function Check. During this examination, the performance of each component within the emission control system was evaluated according to procedures specified by the manufacturer. Those components found to be malfunctioning were immediately corrected or replaced.

Each vehicle then received three test sequences conducted to determine the as-received level of emissions and three test sequences with the catalyst replaced with a bypass pipe that simulated the backpressure of the catalyst. This latter series of tests determined the emission levels of the vehicle with a totally ineffective catalyst.

A specific test sequence was performed without modification at designated intervals during the St. Louis phase of the program. The test sequence consisted of a driveability evaluation, engine status and propane enrichment measurements, a 12 to 24 hour soak, a Federal Test Procedure (without evaporative test), a Federal Short Cycle Test, a Federal Three-Mode Test, and a Two Speed Idle Test. In addition to these standard tests, the undiluted exhausts were measured before and after the catalyst at idle and at 50 mph.

For the second series of three baseline tests designed to determine the emission levels of the vehicle with an ineffective catalyst, catalytic converters were removed from each vehicle and replaced with a bypass unit. These units were constructed with baffles to simulate the average backpressure created by a catalyst.

Following the six baseline test sequences, the vehicles were fueled with commercially available leaded fuel. The standard gas caps were replaced with locking gas caps to ensure control of the type of fuel used.

A series of test sequences were then performed on the seven vehicles at approximately one tankful intervals. This progression of testing continued until the catalyst had been "deactivated" as determined jointly by the contractor and a representative of the EPA.

The original work effort included provisions for a final bypass test sequence and for replacement of the catalyst with a test sequence with the new catalyst. The modification to the work effort specifying rejuvenation efforts included a series of bypass and replacement test sequences. Accordingly, as directed by the EPA, those vehicles not having completed the catalyst deterioration phase of the project at the time of the work effort modification did not require these final deterioration test sequences.

During January, 1980, all seven vehicles were transported to the East Liberty, Ohio test facility. In some instances, the deterioration phase of testing was completed prior to transporting, and for those vehicles not having completed this phase, deterioration was concluded at the Ohio location.

After completion of the deterioration phase, and as specified in the modified work effort, several baseline test sequences were conducted.

The test sequence at the Ohio location was modified to include additional catalyst diagnostic type testing. The Federal Short Cycle Test was eliminated and the raw exhausts were measured before and after the catalyst during the Federal Three Mode Test and the Two-Speed Idle Test. Additionally, a pair of thermocouples were installed 1 1/2 inches upstream of each catalyst on both sides of the pipe and another pair of thermocouples were installed 1 1/2 inches downstream of each catalyst on both sides of the pipe. Catalyst skin temperatures were recorded for the steady state conditions during the idle and 50 mph cruise portion of the test sequence.

The testing program was designed to include misfueling and rejuvenation effects on the oxygen sensor for the three-way catalyst equipped vehicles. For these three vehicles, a series of baseline test sequences were performed immediately following the final deterioration sequence.

The baseline series for three-way catalyst equipped vehicles was:

1. Two (2) test sequences using leaded gasoline, catalyst bypassed, and original O_2 sensor.
2. Two (2) test sequences using unleaded gasoline, catalyst bypassed, and original O_2 sensor.
3. Two (2) test sequences using unleaded gasoline, catalyst bypassed, and new O_2 sensor.
4. One (1) test sequence using unleaded gasoline, original catalyst on, and new O_2 sensor.
5. One (1) test sequence using unleaded gasoline, original catalyst on, and original O_2 sensor.

Four vehicles were equipped with oxidation catalysts only. For these vehicles, the baseline series consisted of a single test sequence using unleaded fuel with the original catalyst in place.

Following the baseline tests, all seven vehicles were subjected to mileage accumulation using unleaded gasoline with test sequences run at approximately one tankful intervals. For the three-way catalyst equipped vehicles, two test sequences were performed at each interval; one sequence with the original poisoned oxygen sensor installed and one with a new oxygen sensor installed. Mileage accumulation was done using the poisoned oxygen sensor.

For the oxidation catalyst equipped vehicles, a single test sequence, using unleaded gasoline with the original catalyst in place, was performed.

Mileage accumulation and test sequences for all seven vehicles continued until at least four full tanks of unleaded gasoline had been consumed, and through consultation with the EPA, it had been determined that no appreciable rejuvenation was occurring.

After completion of the mileage accumulation sequences, the four oxidation catalyst equipped vehicles received a final test sequence using unleaded gasoline with a new catalyst in place. The three vehicles equipped with three-way catalysts received a final series of test sequences consisting of:

1. One (1) test sequence using unleaded gasoline, catalyst bypassed, and original O_2 sensor.
2. One (1) test sequence using unleaded gasoline, catalyst bypassed, and new O_2 sensor.
3. One (1) test sequence using unleaded gasoline, new catalyst in place, and original O_2 sensor.
4. One (1) test sequence using unleaded gasoline, new catalyst in place, and new O_2 sensor.

2.3 TEST VEHICLE PROCUREMENT

2.3.1 Test Vehicle Selection

The seven vehicles selected for this work effort were procured from the loan vehicle fleet utilized in the FY78 Passenger Car Emission Factor Program which was being conducted in St. Louis, Missouri. This method was selected as being representative of true mileage accumulation for in-use vehicles.

The seven vehicles were designated by year (1979), make and type of catalyst system in the work effort. Selection of actual vehicles to be tested was approved by the EPA.

2.3.2 Test Vehicle Screening

Each selected test vehicle was given a thorough examination for test suitability. This examination was conducted at the St. Louis laboratory. Additionally, a sample of fuel was drawn and tested for lead content.

Final qualification of the seven vehicles for testing was determined by ATL representatives and approved by the EPA.

Table 1 summarizes the test vehicles selected.

2.3.3 Test Vehicle Preconditioning Procedure

Following acceptance into the program, the test vehicles' fuel tanks were drained and then refilled to 40% capacity with Indolene test fuel. As necessary, tire pressures were adjusted to manufacturers specifications and tire positions were altered to prevent the use of badly worn or snow tires on the dynamometer.

Vehicle performance characteristics were evaluated during a 10 minute driveability sequence conducted immediately after the test preparation procedures. This brief evaluation was used to purge any remaining as-received gasoline from the vehicles' system and to determine any operating problems which might affect subsequent dynamometer tests.

2.4 VEHICLE TEST PLAN

Testing was conducted in accordance with the Test Flow Diagrams included as Appendix K. Specific actions are designated on the charts by rectangles and decision points are designated by diamond symbols.

Three Flow Diagrams are presented.

1) Catalyst Deterioration - All Vehicles
2) Catalyst Rejuvenation - 3-way
3) Catalyst Rejuvenation - Oxidation

The test sequence performed at the St. Louis facility was:

- A Federal Test Procedure (without evaporative test),
- A Federal Short Cycle Test,
- A Federal 3-Mode Test,
- A Two-Speed Idle Test, and
- A Catalyst Test.

The Catalyst Test was defined as a measurement of the undiluted exhausts before and after the catalyst at idle and at 50 mph using FTP dynamometer loadings.

The test sequence performed at the East Liberty, Ohio facility was:

- A Federal Test Procedure (without evaporative test),
- A Federal 3-Mode Test, with the undiluted exhaust measured before and after the catalyst during each mode,

- A Two Speed Idle Test with the undiluted exhaust measured before and after the catalyst during each speed,
- A Catalyst Test, and
- A Catalyst Skin Temperature Test.

The Catalyst Skin Temperature Test was defined as a measurement of the skin temperatures using two permanently secured thermocouples located 1 1/2 inches before and after the catalyst cones. Temperatures were to be recorded in degrees Fahrenheit at idle and at 50 mph.

Prior to each test sequence at both facility locations, vehicles were given a 10 minute driveability evaluation and soaked for 12 to 24 hours.

Following each test sequence, a procedural review was conducted to assure that exhaust emission tests had been performed as prescribed by the EPA. This review included an examination of dynamometer settings (inertia weight and horsepower), temperature readings and driver's trace tolerances. Other test parameters were also reviewed for mechanical or operational errors. If any problems were determined, the vehicle was again soaked and tested.

After test measurements were performed on the vehicles, including the basic engine status relative to manufacturers settings for idle CO and HC, timing, dwell (if applicable), idle rpm, and propane enrichment rpm gain.

In conjunction with the as-received test sequence, an inspection for engine maladjustments and disablements was conducted to identify vehicle engine parameters and components that were malfunctioning as a result of misadjustments or intentional disabling actions, with particular emphasis on the emission control system. Procedures and specifications for the inspection were conducted in accordance with the appropriate service manual or as specified by the manufacturers representative. Engine settings that were found to be maladjusted were corrected at this time. Disabled vehicle components such as disconnected hoses, lines or wires or loose fittings were also repaired.

All vehicles received a tune-up which included spark plug replacement (if required), oil change, oil and air filter replacement, and a new PCV valve.

Following the as-received test sequences and after resolution of any maladjustment and disablement problems, each vehicles' catalyst was removed and replaced with a bypass unit. The bypass units were equipped with a baffle large enough to simulate normal catalyst backpressure. Three test sequences were performed on each vehicle with the bypass units in place. After completion of these test sequences, the original catalyst was reinstalled and the deterioration phase of the project was initiated.

2.5 VEHICLE TEST FACILITIES AND EQUIPMENT

The ATL test facilities and associated equipment utilized in this work effort were located at 10862 Metro Court, Maryland Heights, Missouri, and at Route 33, Building 40 at TRC, East Liberty, Ohio. Concurrent with the transfer of the seven vehicles to the Ohio facility, the Missouri laboratory was closed.

This work effort was conducted during a period of other ongoing EPA contracts. Accordingly, facility and equipment check procedures were performed prior to the beginning of this effort and periodically rechecked by representatives of the EPA.

2.6 LABORATORY TEST PROCEDURES

Each vehicle received a prescribed sequence of test and inspection procedures during the course of the work effort. These procedures and others associated with the conduct of the program include the following:

Vehicle Preparation
Vehicle Preconditioning
Federal Test Procedure
Federal Short Cycle
Federal 3-Mode Test
Two Speed Idle Test
Catalyst Test (Steady State)

Catalyst Skin Temperature Test

Maladjustment and Disablement Inspection

Catalyst Bypass Fabrication Procedures

Details on these tests and procedures are presented in the following sections.

2.6.1 Test Vehicle Preparation Procedures

All seven vehicles selected for testing received a uniform series of preparation procedures to maintain standard testing conditions and to avoid possible vehicle malfunctions. Transmission fluid levels were checked and filled if found to be low. Radiators and exhaust systems were also examined for leaks prior to final acceptance into the program. A fuel lead test was performed to establish the amount of lead in the as-received fuel and to provide additional data when evaluating catalyst performance.

Test preparation procedures were performed in the laboratory at a location separate from the soak and emission test areas. Upon acceptance into the program, as-received fuel was drained from the vehicle's tank through a pump system connected to the tank filler neck or to the supply line to the engine. The tank was then refilled to 40% capacity with Indolene clear fuel.

Snow tires and tires found to be severely worn were rotated to prevent their use on the drivewheels. If the front and rear tires could not be exchanged, substitutes were acquired. Tire pressure on the drivewheels was also adjusted to 35 psi for all test vehicles.

2.6.2 Vehicle Preconditioning Procedure

An EPA driveability evaluation was performed prior to each soak period. This evaluation was conducted to purge remaining as-received gasoline in the fuel system and to provide test personnel with adequate advance knowledge of vehicle operating characteristics. The driveability test consisted of a five point rating (excellent, good, fair, poor, fail) for vehicle performance during three operating phases: constant speed, acceleration from idle and restart after shut-down. Each of the five ratings used during the evaluations are defined as follows:

Excellent - indicating no trace of undesirable elements (smooth, even responsive).

Good - indicating a slight trace of an undesirable element (initial unevenness, roughness, hesitation).

Fair - indicating an undesirable element exists yet reliability is maintained (only intermittent misfire, surging, hesitation).

Poor - indicating an undesirable element exists which affects reliability or driver confidence (steady misfire, roughness, lack of power, response).

Fail - indicating extremely unreliable, possible unsafe conditions exist (frequent stalling, die-outs on acceleration, lack of throttle response).

General acceleration, cruise and idle quality were evaluated according to the rating system during the constant speed phase. During the acceleration from idle stage, the quality of acceleration during quarter, half, two-thirds and three-quarter throttle was rated. The restart phase was conducted after a ten minute engine-off period and included an assessment of idle quality and the duration of crank time.

2.6.3 Federal Test Procedure (Mass Exhaust Emission Test)

The Federal Test Procedure was performed in accordance with procedures specified in 40 Federal Register 126. Preconditioning requirements for this test include a 12 to 24 hour soak period in an area with an ambient temperature between 20 and 30 degrees Centigrade (68 to 86 Fahrenheit). Each vehicle remained stationary while soaking with the ignition in the unlock position and the transmission in neutral. Doors were unlocked and the window on the driver's side was rolled down.

None of the seven vehicles acquired for this work effort received those segments of the FTP which deal with evaporative loss measurements. Consequently, following the soak period, test vehicles were moved to the dynamometer for the mass exhaust emission segment of the FTP.

Before the test vehicle was placed on the dynamometer and secured, the proper inertia weight and load adjustments were set. During testing, the vehicle hood remained open and a cooling fan was placed in front of the engine approximately six to twelve inches from the vehicle grille.

The Federal Test Procedure consists of three segments: the cold transient stage, the cold stablized stage and the hot transient stage. Sampling during the initial cold transient portion was begun simultaneously with engine crank. This phase continued for 505 seconds at an average speed of 25.6 miles per hour over a cumulative distance of 3.59 miles. At the 505 second point, the exhaust sample was diverted from the first sample bag of the Constant Volume Sampler (CVS) to the second. This marked the beginning of the cold stabilized portion of the test. This segment covers 3.91 miles at an average speed of 16.0 miles per hour. Its duration is 869 seconds. At the end of this phase the engine was stopped, sampling was terminated and the vehicle was soaked on the dynamometer for ten minutes. After soaking, the vehicle was restarted and sampling was switched to the third CVS bag for 505 seconds at an average speed of 25.6 miles per hour. CVS sample and background bags were analyzed within ten minutes after completion of each phase of the test.

2.6.4 Federal Short Cycle Test

The Federal Short Cycle Test is a nine-mode CVS test consisting of vehicle operation over a 125 second driving schedule. Cumulative roll distance is 0.7536 miles. Each mode and its duration are described below.

	MODE	DURATION OF MODE (secs)
1.	0-16 mph acceleration	6
2.	16-29 mph acceleration	23
3.	29 mph cruise	10
4.	29-37 mph acceleration	18
5.	37-42 acceleration	4.5
6.	42-37 deceleration	2.5

7.	37-20 deceleration	32
8.	20-0 mph deceleration	7.5
9.	Idle	21.5
	Total seconds	125.0

Inertia weight, horsepower loads and manual transmision shift speeds are the same as those used during the Federal Test Procedure.

The Federal Short Cycle was preceded by a six minute preconditioning period comprised of a three minute soak with the engine off and a three minute idle (in neutral) period. During preconditioning the engine compartment remained open with the auxilary cooling fan on. Total emissions over the full driving schedule were collected in one sample bag and analyzed within five minutes after the end of sampling.

2.6.5 Federal 3-Mode Test

This test is comprised of three steady state modes performed with the dynamometer loads set to simulate the average power (for each light duty vehicle) occuring at each of the three speeds during an FTP. The 3-Mode Test was preceded by a six minute (3 ± 1 minute engine-off, 3 ± 1 minute idle) preconditioning period performed with the hood open and the cooling fan on. Following preconditioning, the vehicle was operated for a maximum of three minutes at high cruise (52 mph) with the inertia weight set at the minimum level. The specified dynamometer horsepower was set for each speed during the stabilization period. Equilibrium of vehicle speed and the CO, HC and NO_x readings were maintained for 30 seconds before emissions were recorded. This procedure was repeated for the low cruise (25 mph) and idle modes. Since actual horsepower was used for this test, additional dynamometer coastdown calibrations at 25 and 52 mph were performed.

2.6.6 Two Speed Idle Test

Raw tailpipe samples from vehicles operated at high and curb idle rates were analyzed during the Two Speed Idle Test. This brief evaluation was preceded by a six minute engine-off and a three minute idle period. At the end of the six minutes, the vehicle was operated in neutral for a maximum of three minutes at 2500 rpm and then at curb idle. Exhaust emissions were analyzed at each speed after rpm and analyzer outputs for CO, HC and NO_x had stabilized for a minimum of 30 seconds. Tests were conducted with the vehicle hood open and the auxiliary fan on.

2.6.7 Catalyst Test (Steady State)

This test is comprised of two steady state operating modes and is preceded by a 6 minute soak, with engine off for 3 minutes followed by engine idling in the neutral position for 3 minutes. FTP dynamometer settings were used with the hood open and the cooling fan on. Inertia weights were set identical to the FTP.

At the end of the soak (idle) period, the vehicle was placed in the drive position with the engine at idle. Equilibrium of the vehicle speed and the CO, HC and NO_x readings were maintained for 30 seconds prior to recording emissions. The second mode immediately followed the Idle-Drive measurement, with the vehicle operated at 50 miles per hour. Undiluted emissions were measured by the volumetric procedure for each mode, before and after the catalytic converter(s).

2.6.8 Catalyst Skin Temperature Test

This test consists of catalyst skin temperature measurements, recorded 1 1/2 inches upstream and downstream of the catalytic converter(s). Thermocouples were installed on top and bottom of pipes before and after the catalyst. Readings were recorded in degrees Fahrenheit using digital thermometers which were plugged into each thermocouple device. This test followed the Catalyst Test and was preceded by a 6 minute soak identical to that used for the Catalyst Test. At the end of the soak period, the vehicle was operated at idle in the drive position for 3 minutes. At this point, temperature readings were recorded for the idle mode. The vehicle was then operated at 50 miles per hour for 3 minutes, followed by recording of temperatures in that mode.

2.6.9 After Test Procedure

Basic engine parameters were measured after each test sequence to further document test conditions. These parameters consisted of: basic ignition timing, dwell (if applicable), idle speed, and undiluted idle CO and HC. These measurements were performed according to procedures outlined on the emission data sticker.

2.6.10 Maladjustment and Disablement Inspection

This inspection consisted of a step-by-step evaluation of separate engine systems and their components to determine if each was functionally intact and complete. During the course of the examination the induction, carburetor and fuel, ignition, EGR, air injection, PCV, exhaust and evaporative control systems were inspected for proper settings and system alignment. Disconnected hoses, lines and wires, missing or poorly fitted components were noted and repaired as part of the procedure. Maladjusted engine parameters such as timing, choke and idle rpm settings were also examined and corrected.

2.6.11 Catalyst Bypass Fabrication Procedures

Following the three as-received test sequences, each vehicle received a series of three test sequences designed to provide data on catalyst efficiency and for subsequent correlation. These sequences were performed after the as-received catalyst had been removed and replaced with a catalyst bypass. This bypass unit was constructed to create a level of exhaust system backpressure comparable to that generated by the catalyst. Actual catalyst backpressure was initially determined by gauging stabilized pressure levels generated upstream of the as-received catalyst at a 60 mph cruise speed. After finding this pressure level the catalyst was removed and replaced with a stock tailpipe repair section (sizes ranged from approximately 16 to 24 inches in length) fitted with a circular plate or baffle at one end. The backpressure created by this unit was then adjusted by drilling a series of half inch diameter holes in the baffle until the pressure created by the bypass unit at 60 mph was within two inches H_2O of the actual catalyst backpressure. Because exhaust system configurations and pressures vary from vehicle to vehicle, a separate bypass unit was constructed for each vehicle tested.

Following the full sequence of tests, all vehicles were equipped with a new catalyst. All as-received catalysts were tagged and delivered to the EPA for further inspection.

2.6.12 Special Test Considerations and Procedures

For those tests requiring both before and after catalytic converter readings, minor data discrepencies were observed. These disparities were caused by the inability to measure before and after readings concurrently due to the unavailability of dual test facilities. As a result, after converter emission readings may have been recorded as less than a simultaneous reading would have permitted.

For dual exhaust vehicles, emission readings were recorded from the combined exhausts from both sides. This was accomplished through utilization of "Y" connectors fitted to the analyzer equipment. Combined readings were recorded for both the before and after converter status.

2.7 DATA PROCESSING PROCEDURES

Accumulated raw test data and associated materials received a systematic review of each test point in the work effort from initial generation to final processing. These data accumulation and review procedures are described below.

2.7.1 Data Collection

Emission test procedures and laboratory conditions were monitored and controlled through the use of strip chart recorders. These units provided a constant read-out of data and also served to document test activities for later review. Test parameters registered on the recorders included emission analyzer outputs, wet and dry bulb measurements of air directed to the front of test vehicles and dilute exhaust stream temperatures. Driver/vehicle performance traces were also documented on a strip chart recorder and included speed calibrations and subsequent calibration checks performed before and after each test.

A NOVA 2 minicomputer was utilized to collect and integrate CVS sample and background bag emission data. Speed/time profiles were also generated for each test schedule by the computer and produced on the driver/vehicle performance trace. In addition to these functions, the computer totalized and recorded CVS mass pump revolutions during each exhaust emission test segment.

Movement of each test vehicle through segments of the work effort was controlled and documented through various raw data sheets. All data forms were collected in test packets which were assigned to each vehicle prior to testing. As testing progressed, relevant sheets were completed, signed and returned to the packet by the appropriate technician. Included in the packet were: all raw data sheets used to identify the vehicle, raw data sheets used during tests, analyzer strip chart recordings, computer system sheets and magnetic tapes and all appropriate temperature strip chart recordings.

Laboratory personnel were also furnished a form indicating the daily test schedule including the order each vehicle was to be tested and the estimated duration of each test segment. Preconditioning personnel were also furnished with a similar schedule indicating the time each vehicle was to be placed in soak.

2.7.2 Data Review and Editing

Vehicle packets were reviewed for completeness, accuracy and compliance with temperature and speed tolerances on a test by test basis. This review was performed as soon as possible after each test to allow an appropriate solution to any problems that might arise. The test packet was reviewed a second time after all tests had been completed. After solving any remaining discrepancies, the completed packet was forwarded to the data processing department.

Data processing procedures included an additional review of packet contents by personnel not directly involved in the original tests. Following this, data from the onsite NOVA 2 minicomputer and raw data sheets were combined into a single magnetic tape which was input to an offsite, time-share computer. The combined information was subsequently listed back out and manually proof-read against the original input to detect errors introduced through keypunch operations or transmission difficulties. When obvious data entry errors had been resolved and corrected, a computerized edit program was applied to the data. The program subjects each entry to a test of reasonableness. If recorded information fails to fall within a predetermined range, the computer indicated the presence of a possible error and identified the area requiring additional investigation. Any discrepancies found to exist at this stage were resolved either through further clarifying information from test personnel, reference to test records or through a complete retest of the vehicle.

As soon as all problems were resolved, the data were reduced and printed out for a final review before the test was declared valid. When this process was completed, the data were delivered to the EPA in the form of interpreted 80 column punch cards along with the completed data packet.

2.7.3 Calculation of Test Results

2.7.3.1 Federal Test Procedure Emission Data - Mass emission test results were calculated using equations specified in 40 Federal Register 126 and reported in grams per mile for CO, CO_2, HC and NO_x. Fuel economy data for this test were calculated using the carbon balance equation.

2.7.3.2 Federal Short Cycle - Results of the Federal Short Cycle Test were calculated using Federal Register equations and a distance constant of 0.7536 miles per test.

2.7.3.3 Two Speed Idle Test - Emission results for this test are comprised of tailpipe and, if specified, before converter concentrations and are reported as measured.

2.7.3.4 Federal 3-Mode Test - Emission results from this test are also comprised of undiluted tailpipe and, if specified, before converter concentrations and are reported as measured.

2.7.3.5 Catalyst Test - Emission results from this test are also comprised of undiluted tailpipe and, if specified, before converter concentrations and reported as measured.

3. LISTINGS OF INDIVIDUAL VEHICLE PARAMETERS

LISTING OF MALADJUSTMENT & DISABLEMENT CODES AND EXPLANATIONS

Carburetor and Fuel System, Choke (Subsystem 1)

114 - Choke Notches, Primary Vacuum, and Secondary Vacuum properly adjusted

413 - Choke Notches, Primary Vacuum properly adjusted; Secondary Vacuum is lean

423 - Choke set rich, Primary and Secondary Vacuum properly adjusted

Ignition System, Timing (Subsystem 2)

401 - Timing advance more than 2 degrees from specification

Internal Engine, Engine & Oil Filter (Subsystem 2)

702 - More than 2 quarts low

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9401 TUE JUL 29, 1980 12:36 TEST SITE: ST. LOUIS

DATE: 05/09/79 VIN: 9G87F18797 SUB CODE: 1 METH. OF PROC.: 5

MODEL YEAR :	1979	MAKE :	FORD	MODEL :	THND
MODEL SIZE :	M	CYLINDERS :	8	DISPLACEMENT:	302
CARBURETOR :	2	TRANSMISSION:	AUTO.	FUEL TANK :	21
TRUE MILEAGE:	8,277	NADA WT. :	3893	INERTIA WT. :	4500
10% A/C LOAD:	MS	ACTUAL HP :	11.9		
MPG CITY :	14.0	MPG HIGHWAY :	20.0	MPG COMB. :	16.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	28	27	26	27
SPECIFIED PRESSURE:	30	30	30	30
TIRE WEAR:	1	1		

LEAD CONT.: 0.037
TIRE SIZE: GR78-15
TIRE BRAND: GENE
VEH.COLOR : 1

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES	FILLER NECK STATUS	5
VEHICLE EQPD AIR PUMP?	YES	OBVIOUS MALADJ/DISABL?	NO
VEHICLE EQPD CAT CONV?	OXIDATION	SOURCE MFRS. SPECS.	EM. STICKER
VEHICLE EQPD THML REA?	NO	DISTRIBUTOR PART NO.	D9ZE-CA
VEHICLE EQPD TRBOCHGR?	NO	CARBURETOR PART NO.	D9DE-RA
ENGINE FAMILY	5.0C2X124/LA	EGR VALVE NO.	D9OE-638
ENGINE CAL. (C)	11J	BUILD DATE	09/78
ENGINE CAL. (R)	0	EM STICKER NO.	D9OE-AA
CERTIFICATION	FEDERAL	AXLE RATIO	1:2.40

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	99	1100
MECH ADV MPT (RPM)	99	2400
MECH ADV MPT (DEG)	99	12.00
VAC ADV BEG ("HG)	99	5.00
RPM DIFF @ MAX ADV		+160
MAX VAC ADV ("HG)	99	17.00
MAX VAC ADV (DEG)	99	22.00
FAST IDLE RPM	2100	2000
CHOKE NOTCHES	+03	+03
PRIMARY VAC BREAK	99	0.100
SEC. VAC BREAK	99	99

						PROPANE		ENRICHMENT	
						DRIVE		NEUTRAL	
	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	W/OUT	WITH	W/OUT	WITH
SPEC.:	600	99	+ 8	99.99					
MEAS.:	620	99	+10	0.02	59	620	600	880	960

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VEHICLE NO. 9401 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE 1	2	3	4	5	6	7	8	9	10	SYS. PERF
IGNITION	P	P	P	P	-	P	P	-	-		PASS
CARBURETOR	P	P	P	P	-	-	P	P	P	P	PASS
CHOKE	114	P	P	P	-	-	-	-	-	-	PASS
INDUCTION	P	P	P	P	P	P	-				PASS
E.G.R.	P	-	-	-	-	-	P	P	-		PASS
AIR PUMP	P	P	P	-	-	-	P	P	P	-	PASS
P.C.V.	P	P	P	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	-	P	-							PASS
INT. ENGINE	?	P	P	-	P	P	P	?			PASS

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9402 TUE JUL 29, 1980 12:38 TEST SITE: ST. LOUIS

DATE: 07/27/79 VIN: 9G87F118796 SUB CODE: 1 METH. OF PROC.: 5

MODEL YEAR	1979	MAKE	FORD	MODEL	THND
MODEL SIZE	M	CYLINDERS	8	DISPLACEMENT	302
CARBURETOR	2	TRANSMISSION	AUTO.	FUEL TANK	21
TRUE MILEAGE	9,287	NADA WT.	3893	INERTIA WT.	4500
10% A/C LOAD	MS	ACTUAL HP	11.9		
MPG CITY	14.0	MPG HIGHWAY	20.0	MPG COMB.	16.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	25	18	29	29
SPECIFIED PRESSURE:	29	29	29	29
TIRE WEAR:	1	1		

LEAD CONT.: 0.037
TIRE SIZE: GR78-15
TIRE BRAND: GENE
VEH.COLOR : 7

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES	FILLER NECK STATUS	5
VEHICLE EQPD AIR PUMP?	YES	OBVIOUS MALADJ/DISABL?	NO
VEHICLE EQPD CAT CONV?	OXIDATION	SOURCE MFRS. SPECS.	EM. STICKER
VEHICLE EQPD THML REA?	NO	DISTRIBUTOR PART NO.	D9ZE-CA
VEHICLE EQPD TRBOCHGR?	NO	CARBURETOR PART NO.	D9DE-RA
ENGINE FAMILY	5.0C2X124/LA	EGR VALVE NO.	D9OE-A2B
ENGINE CAL. (C)	11J	BUILD DATE	09/78
ENGINE CAL. (R)	0	EM STICKER NO.	D9OE-AA
CERTIFICATION	FEDERAL	AXLE RATIO	1:2.75

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	99	1000
MECH ADV MPT (RPM)	99	2400
MECH ADV MPT (DEG)	99	15.00
VAC ADV BEG ("HG)	99	5.00
RPM DIFF @ MAX ADV		+220
MAX VAC ADV ("HG)	99	14.50
MAX VAC ADV (DEG)	99	37.00
FAST IDLE RPM	2100	2000
CHOKE NOTCHES	+03	+03
PRIMARY VAC BREAK	99	0.120
SEC. VAC BREAK	99	99

	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	PROPANE DRIVE W/OUT	PROPANE DRIVE WITH	ENRICHMENT NEUTRAL W/OUT	ENRICHMENT NEUTRAL WITH
SPEC.:	600	99	+ 8	99.99					
MEAS.:	600	99	+11	0.00	56	600	680	760	1060

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VEHICLE NO. 9402 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE 1	2	3	4	5	6	7	8	9	10	SYS. PERF
IGNITION	P	401	P	P	P	P	P	-	-		FAIL
CARBURETOR	P	P	P	P	-	P	-	P	P	-	PASS
CHOKE	114	P	P	P	P	-	P	-	P	-	PASS
INDUCTION	P	P	P	P	P	P	-				PASS
E.G.R.	P	P	-	P	P	P	P	P	-		PASS
AIR PUMP	P	P	P	-	-	-	P	P	P	P	PASS
P.C.V.	P	P	P	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	P	P	-							PASS
INT. ENGINE	?	702	P	-	P	P	P	?			FAIL

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9403 TUE JUL 29. 1980 12:41 TEST SITE: ST. LOUIS

DATE: 05/17/79 VIN: 3R47F9M417985 SUB CODE: 1 METH. OF PROC.: 5

MODEL YEAR :	1979	MAKE :	OLDS	MODEL :	CUTL
MODEL SIZE :	M	CYLINDERS :	8	DISPLACEMENT:	260
CARBURETOR :	2	TRANSMISSION:	AUTO.	FUEL TANK :	18
TRUE MILEAGE:	6,488	NADA WT. :	3206	INERTIA WT. :	3500
10% A/C LOAD:	MS	ACTUAL HP :	11.3		
MPG CITY :	19.0	MPG HIGHWAY :	25.0	MPG COMB. :	21.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	40	41	39	39
SPECIFIED PRESSURE:	30	30	32	32
TIRE WEAR:	1	1		

LEAD CONT.: 0.067
TIRE SIZE: 75-R14
TIRE BRAND: UNIR
VEH.COLOR : 9

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES	FILLER NECK STATUS	5
VEHICLE EQPD AIR PUMP?	NO	OBVIOUS MALADJ/DISABL?	NO
VEHICLE EQPD CAT CONV?	OXIDATION	SOURCE MFRS. SPECS.	EM. STICKER
VEHICLE EQPD THML REA?	NO	DISTRIBUTOR PART NO.	1103320
VEHICLE EQPD TRBOCHGR?	NO	CARBURETOR PART NO.	17059150
ENGINE FAMILY	930H2U / 9B3-3	EGR VALVE NO.	17061576
ENGINE CAL. (C)	N/A	BUILD DATE	09/78
ENGINE CAL. (R)	N/A	EM STICKER NO.	22500525
CERTIFICATION	FEDERAL	AXLE RATIO	1:2.29

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	910	650
MECH ADV MPT (RPM)	2375	2375
MECH ADV MPT (DEG)	17.00	15.00
VAC ADV BEG ("HG)	4.00	4.00
RPM DIFF @ MAX ADV		+120
MAX VAC ADV ("HG)	11.00	11.00
MAX VAC ADV (DEG)	30.00	17.00
FAST IDLE RPM	800	900
CHOKE NOTCHES	+02	+02
PRIMARY VAC BREAK	0.129	0.110
SEC. VAC BREAK	0.195	0.060

	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	PROPANE —DRIVE— W/OUT	PROPANE —DRIVE— WITH	ENRICHMENT —NEUTRAL— W/OUT	ENRICHMENT —NEUTRAL— WITH
SPEC.:	500	99	+20	99.99					
MEAS.:	500	99	+21	0.00	62	500	560	600	700

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VEHICLE NO. 9403 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE										SYS. PERF
	1	2	3	4	5	6	7	8	9	10	
IGNITION	P	P	P	P	-	P	P	-	-		PASS
CARBURETOR	P	-	P	P	-	-	P	P	P	-	PASS
CHOKE	413	P	-	P	-	-	-	-	-	-	FAIL
INDUCTION	P	P	P	-	P	P	-				PASS
E.G.R.	P	-	-	-	-	-	P	P	P		PASS
AIR PUMP	-	-	-	-	-	-	-	-	-	-	N/A
P.C.V.	P	P	P	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	P	P	-							PASS
INT. ENGINE	?	P	P	-	P	P	P	?			PASS

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9404   TUE JUL 29, 1980   12:44   TEST SITE: ST. LOUIS

DATE: 05/15/79   VIN: 3R47F9M417984   SUB CODE: 1   METH. OF PROC.: 5

MODEL YEAR :	1979	MAKE :	OLDS	MODEL :	CUTL
MODEL SIZE :	M	CYLINDERS :	8	DISPLACEMENT:	260
CARBURETOR :	2	TRANSMISSION:	AUTO.	FUEL TANK :	18
TRUE MILEAGE:	7,231	NADA WT. :	3206	INERTIA WT. :	3500
10% A/C LOAD:	MS	ACTUAL HP :	11.3		
MPG CITY :	19.0	MPG HIGHWAY :	25.0	MPG COMB. :	21.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	29	29	27	31
SPECIFIED PRESSURE:	32	32	32	32
TIRE WEAR:	1	1		

LEAD CONT.: 0.030
TIRE SIZE: P75R14
TIRE BRAND: UNIR
VEH.COLOR : 5

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES	FILLER NECK STATUS	5
VEHICLE EQPD AIR PUMP?	NO	OBVIOUS MALADJ/DISABL?	NO
VEHICLE EQPD CAT CONV?	OXIDATION	SOURCE MFRS. SPECS.	EM. STICKER
VEHICLE EQPD THML REA?	NO	DISTRIBUTOR PART NO.	1103320
VEHICLE EQPD TRBOCHGR?	NO	CARBURETOR PART NO.	17059150
ENGINE FAMILY	930H2U / 9B3-3	EGR VALVE NO.	17061576
ENGINE CAL. (C)	N/A	BUILD DATE	09/78
ENGINE CAL. (R)	N/A	EM STICKER NO.	22500525
CERTIFICATION	FEDERAL	AXLE RATIO	1:2.56

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	910	850
MECH ADV MPT (RPM)	2380	2380
MECH ADV MPT (DEG)	17.00	11.00
VAC ADV BEG ("HG)	4.00	4.00
RPM DIFF @ MAX ADV		+100
MAX VAC ADV ("HG)	11.00	11.00
MAX VAC ADV (DEG)	30.00	27.00
FAST IDLE RPM	800	800
CHOKE NOTCHES	+02	+02
PRIMARY VAC BREAK	0.129	0.130
SEC. VAC BREAK	0.195	0.190

	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	PROPANE —DRIVE— W/OUT	ENRICHMENT —DRIVE— WITH	—NEUTRAL— W/OUT	—NEUTRAL— WITH
SPEC.:	500	99	+20	99.99					
MEAS.:	480	99	+20	0.00	43	480	520	580	620

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VEHICLE NO. 9404 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE										SYS. PERF
	1	2	3	4	5	6	7	8	9	10	
IGNITION	P	P	P	P	P	P	P	-	-		PASS
CARBURETOR	P	-	?	P	-	-	P	P	P	-	PASS
CHOKE	114	P	-	P	-	-	-	-	-	-	PASS
INDUCTION	P	P	P	-	P	P	-				PASS
E.G.R.	P	-	P	-	-	-	-	P	-		PASS
AIR PUMP	-	-	-	-	-	-	-	-	-	-	N/A
P.C.V.	P	P	P	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	P	P	-							PASS
INT. ENGINE	?	P	P	-	P	P	P	?			PASS

BUILD ________

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9405 WED JUL 30, 1980 11:02 TEST SITE: ST. LOUIS

DATE: 05/16/79 VIN: 9Z62H658748 SUB CODE: 1 METH. OF PROC.: 5

MODEL YEAR	1979	MAKE	MERC	MODEL	MARQ
MODEL SIZE	L	CYLINDERS	8	DISPLACEMENT:	351
CARBURETOR	2	TRANSMISSION:	AUTO.	FUEL TANK	19
TRUE MILEAGE:	4,044	NADA WT.	3557	INERTIA WT.	4000
10% A/C LOAD:	MS	ACTUAL HP	12.0		
MPG CITY	15.0	MPG HIGHWAY	21.0	MPG COMB.	17.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	39	39	20	37
SPECIFIED PRESSURE:	32	32	32	32
TIRE WEAR:	1	1		

LEAD CONT.: 0.037
TIRE SIZE: FR78-15
TIRE BRAND: FIRE
VEH.COLOR : 7

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES	FILLER NECK STATUS	5
VEHICLE EQPD AIR PUMP?	YES	OBVIOUS MALADJ/DISABL?	NO
VEHICLE EQPD CAT CONV?	THREE-WAY	SOURCE MFRS. SPECS.	EM. STICKER
VEHICLE EQPD THML REA?	NO	DISTRIBUTOR PART NO.	D9AE-BA
VEHICLE EQPD TRBOCHGR?	NO	CARBURETOR PART NO.	D9ME-AA
ENGINE FAMILY	5.8WBV2TT95X95	EGR VALVE NO.	D9OE-A3A
ENGINE CAL. (C)	N/A	BUILD DATE	12/78
ENGINE CAL. (R)	N/A	EM STICKER NO.	D9ME-AC
CERTIFICATION	FEDERAL	AXLE RATIO	1:2.50

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	99	99
MECH ADV MPT (RPM)	99	99
MECH ADV MPT (DEG)	99	99
VAC ADV BEG ("HG)	99	99
RPM DIFF @ MAX ADV		+099
MAX VAC ADV ("HG)	99	99
MAX VAC ADV (DEG)	99	99
FAST IDLE RPM	2000	1800
CHOKE NOTCHES	+00	+00
PRIMARY VAC BREAK	99	0.120
SEC. VAC BREAK	99	99

						PROPANE		ENRICHMENT	
						—DRIVE—		—NEUTRAL—	
	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	W/OUT	WITH	W/OUT	WITH
SPEC.:	640	99	+99	99.99					
MEAS.:	650	99	+99	0.03	13	650	630	900	980

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VEHICLE NO. 9405 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE 1	2	3	4	5	6	7	8	9	10	SYS. PERF
IGNITION	P	?	P	-	-	-	P	-	P		PASS
CARBURETOR	P	-	?	P	-	-	P	P	P	P	PASS
CHOKE	114	P	P	P	-	-	-	-	-	-	PASS
INDUCTION	P	P	P	P	P	P	-				PASS
E.G.R.	P	?	P	-	?	P	-	P	P		PASS
AIR PUMP	P	P	P	-	-	-	P	P	P	-	PASS
P.C.V.	P	P	P	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	-	P	-							PASS
INT. ENGINE	?	P	P	-	P	P	P	?			PASS

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9406 TUE JUL 29, 1980 12:49 TEST SITE: ST. LOUIS

DATE: 05/10/79 VIN: 24545L1198065 SUB CODE: 1 METH. OF PROC.: 5

MODEL YEAR :	1979	MAKE :	VOLV	MODEL :	245
MODEL SIZE :	C	CYLINDERS :	4	DISPLACEMENT:	130
CARBURETOR :	0	TRANSMISSION:	AUTO.	FUEL TANK :	16
TRUE MILEAGE:	5,795	NADA WT. :	3069	INERTIA WT. :	3500
10% A/C LOAD:	MS	ACTUAL HP :	12.8		
MPG CITY :	0.0	MPG HIGHWAY :	0.0	MPG COMB. :	0.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	26	26	27	27
SPECIFIED PRESSURE:	26	26	27	27
TIRE WEAR:	1	1		

LEAD CONT.: 0.037
TIRE SIZE: 175-R14
TIRE BRAND: UNIR
VEH.COLOR : 9

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES	FILLER NECK STATUS	5
VEHICLE EQPD AIR PUMP?	NO	OBVIOUS MALADJ/DISABL?	NO
VEHICLE EQPD CAT CONV?	THREE-WAY	SOURCE MFRS. SPECS.	EM. STICKER
VEHICLE EQPD THML REA?	NO	DISTRIBUTOR PART NO.	0237003006
VEHICLE EQPD TRBOCHGR?	NO	CARBURETOR PART NO.	N/A
ENGINE FAMILY	4CL / E1	EGR VALVE NO.	N/A
ENGINE CAL. (C)	N/A	BUILD DATE	04/78
ENGINE CAL. (R)	N/A	EM STICKER NO.	1254881P03
CERTIFICATION	CALIFORNIA	AXLE RATIO	1:3.91

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	99	600
MECH ADV MPT (RPM)	99	2400
MECH ADV MPT (DEG)	99	11.00
VAC ADV BEG ("HG)	99	4.00
RPM DIFF @ MAX ADV		+180
MAX VAC ADV ("HG)	99	17.00
MAX VAC ADV (DEG)	99	14.00
FAST IDLE RPM	99	99
CHOKE NOTCHES	+97	+97
PRIMARY VAC BREAK	99	99
SEC. VAC BREAK	99	99

						PROPANE ENRICHMENT			
						DRIVE		NEUTRAL	
	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	W/OUT	WITH	W/OUT	WITH
SPEC.:	900	99	+12	2.00					
MEAS.:	820	99	+12	0.01	50	650	670	820	840

VEHICLE NO. 9406 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE 1	2	3	4	5	6	7	8	9	10	SYS. PERF
IGNITION	P	P	P	P	P	-	P	?	-		PASS
CARBURETOR	-	-	?	P	-	-	-	?	P	P	PASS
CHOKE	-	-	-	-	-	-	-	-	-	-	N/A
INDUCTION	-	-	-	-	-	-	-				N/A
E.G.R.	-	-	-	-	-	-	-	-	-		N/A
AIR PUMP	-	-	-	-	-	-	-	-	-	-	N/A
P.C.V.	?	?	?	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	P	P	-							PASS
INT. ENGINE	?	P	P	-	P	P	P	?			PASS

VALID ________

CATALYST DETERIORATION PROGRAM

VEHICLE NO. 9407 TUE JUL 29, 1980 13:23 TEST SITE: ST. LOUIS

DATE: 07/27/79 VIN: 1M27197188077 SUB CODE: 1 METH. OF PROC.: 5

MODEL YEAR	1979	MAKE	CHEV	MODEL	MONZ
MODEL SIZE	S	CYLINDERS	4	DISPLACEMENT	151
CARBURETOR	2	TRANSMISSION	AUTO.	FUEL TANK	19
TRUE MILEAGE	5,182	NADA WT.	2577	INERTIA WT.	3000
10% A/C LOAD	MS	ACTUAL HP	9.9		
MPG CITY	22.0	MPG HIGHWAY	30.0	MPG COMB.	25.0

VEHICLE PRECONDITIONING

	LF	RF	LR	RR
MEASURED PRESSURE:	26	26	30	30
SPECIFIED PRESSURE:	26	26	30	30
TIRE WEAR:	1	1		

LEAD CONT.: 0.037
TIRE SIZE: A78-13
TIRE BRAND: GENE
VEH.COLOR : 5

ENGINE STATUS

VEHICLE EQPD AIR COND?	YES
VEHICLE EQPD AIR PUMP?	NO
VEHICLE EQPD CAT CONV?	THREE-WAY
VEHICLE EQPD THML REA?	NO
VEHICLE EQPD TRBOCHGR?	NO
ENGINE FAMILY	920X2CEU/9B5-2
ENGINE CAL. (C)	N/A
ENGINE CAL. (R)	N/A
CERTIFICATION	CALIFORNIA

FILLER NECK STATUS	5
OBVIOUS MALADJ/DISABL?	NO
SOURCE MFRS. SPECS.	EM. STICKER
DISTRIBUTOR PART NO.	1103365
CARBURETOR PART NO.	N/A
EGR VALVE NO.	61701
BUILD DATE	02/79
EM STICKER NO.	10008844
AXLE RATIO	1:2.93

ENGINE PARAMETER	SPEC	MEAS
MECH ADV BEG (RPM)	99	1140
MECH ADV MPT (RPM)	2500	2500
MECH ADV MPT (DEG)	8.00	8.00
VAC ADV BEG ("HG)	99	6.00
RPM DIFF @ MAX ADV		+160
MAX VAC ADV ("HG)	99	12.00
MAX VAC ADV (DEG)	99	17.00
FAST IDLE RPM	2400	2100
CHOKE NOTCHES	+01	+02
PRIMARY VAC BREAK	99	0.190
SEC. VAC BREAK	99	99

	IDLE RPM	DWELL	TIMING	IDLE CO(%)	IDLE HC(ppm)	PROPANE DRIVE W/OUT	PROPANE DRIVE WITH	ENRICHMENT NEUTRAL W/OUT	ENRICHMENT NEUTRAL WITH
SPEC.:	850	99	+14	99.99					
MEAS.:	830	99	+13	0.01	49	830	840	1100	1200

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

VEHICLE NO. 9407 (CONT'D.)

MALADJUSTMENT AND DISABLEMENT INSPECTION

SYSTEM	SUBSYSTEM PERFORMANCE 1	2	3	4	5	6	7	8	9	10	SYS. PERF
IGNITION	P	P	P	P	-	P	P	-	-		PASS
CARBURETOR	P	P	P	P	-	P	-	P	P	-	PASS
CHOKE	423	P	P	P	P	P	P	-	P	-	FAIL
INDUCTION	P	-	P	-	P	P	-				PASS
E.G.R.	P	P	-	-	P	-	P	P	-		PASS
AIR PUMP	-	-	-	-	-	-	-	-	-	-	N/A
P.C.V.	P	P	P	-							PASS
EXHAUST	P	P	-								PASS
EVAPORATIVE	P	P	P	-							PASS
INT. ENGINE	?	P	P	P	P	P	P	?			PASS

CATALYST DETERIORATION/REJUVENATION

APPENDIX A - LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATION

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

    UNL - Unleaded
    LEAD - Leaded

CONV - Converter status

    OR - Original
    BP - Bypass
    RE - Replaced

O_2 SENSOR - Oxygen Sensor

    NA - Not Applicable (Oxidation Catalyst)
    NW - Replacement 3-way
    OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

CONSTANT SPEED PHASE

NS - Number of stalls or pass outs upon slight acceleration to road speed

AQ - Acceleration quality (E: excellent; G: good; F: fair; P: poor; U: fail)

CQ - Cruise quality (E: excellent; G: good; F: fair; P: poor; U: fail)

SA - Slight acceleration response or passing quality (E: excellent; G: good; F: fair; P: poor; U: fail)

IO - Idle quality at stop with air conditioner on (E: excellent; G: good; F: fair; P: poor; U: fail)

IF - Idle quality at stop with air conditioner off (E: excellent; G: good; F: fair; P: poor; U: fail)

ACCELERATION FROM STOP PHASE

1/4 - Quality of acceleration under 1/4 throttle (E: excellent; G: good; F: fair; P: poor; U: fail)

1/2 - Quality of acceleration under 1/2 throttle (E: excellent; G: good; F: fair; P: poor; U: fail)

2/3 - Quality of acceleration under 2/3 throttle (E: excellent; G: good; F: fair; P: poor; U: fail)

3/4 - Quality of acceleration under 3/4 throttle (E: excellent; G: good; F: fair; P: poor; U: fail)

RESTART PHASE

CT - Cranking time to start after ten minutes in seconds

IQ - Idle quality after restart (E: excellent; G: good; F: fair; P: poor; U: fail)

The codes for idle, acceleration and cruise quality are defined as follows:

E - Excellent - No trace of undesirable elements (smooth, even, responsive)

G - Good - Slight trace, small indication of an undesirable element (initial unevenness, roughness, hesitation, quickly overcome)

F - Fair - Undesirable element exists yet reliability is retained (only intermittent misfire, surging, hesitation)

P - Poor - Undesirable element exists which affects reliability or driver confidence (steady misfire, roughness, lack of power, response)

U - Fail - Extremely unreliable, possible unsafe conditions exist (frequent stalling, die-outs on acceleration, lack of throttle response)

Pass-outs are defined as restart from "off idle" stall. The Constant Speed Phase, Acceleration from Stop Phase, and the Restart Phase are performed during the ten minute preconditioning drive.

APPENDIX A

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RESTART PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0001	UNL	OR	NA	8,316	0	0	G	G	G	G	G	G	G	G	G	2	G
D0003	UNL	OR	NA	8,394	0	0	G	G	G	F	G	F	F	F	F	3	F
D0005	UNL	OR	NA	8,442	8	0	G	G	G	G	G	G	F	G	G	2	G
D0008	UNL	BP	NA	8,694	5	0	G	G	F	G	G	F	G	G	G	2	G
D0010	UNL	BP	NA	8,733	0	0	F	F	F	P	F	F	F	F	F	2	F
D0013	UNL	BP	NA	8,760	6	0	F	F	F	F	F	F	F	F	F	3	F
D0034	LEAD	OR	NA	9,046	40	0	F	F	F	F	F	F	F	F	F	1	F
D0038	LEAD	OR	NA	9,307	15	0	F	G	G	G	G	G	G	G	G	3	G
D0072	LEAD	OR	NA	9,770	41	0	F	F	F	F	F	F	F	F	F	1	F
D0093	LEAD	OR	NA	10,069	20	0	G	G	G	F	F	F	F	G	G	2	F
D0109	UNL	BP	NA	10,446	72	0	E	E	E	E	E	E	E	E	E	2	E
D0118	UNL	RE	NA	10,532	0	0	G	E	G	G	E	G	G	G	E	1	E
R0154	LEAD	OR	NA	11,750	91	1	P	F	F	E	E	G	G	G	G	1	E
R0157	LEAD	OR	NA	11,795	3	0	E	G	G	G	G	G	E	G	G	1	E
R0165	LEAD	OR	NA	11,831	6	0	F	G	F	G	E	E	G	F	G	3	E
R0173	UNL	BP	NA	11,877	22	0	E	E	E	G	G	E	E	E	E	2	E
R0178	UNL	OR	NA	11,909	0	0	G	E	G	G	G	G	E	G	E	1	G
R0184	UNL	OR	NA	12,118	17	0	G	E	G	G	G	G	E	E	E	1	G
R0189	UNL	OR	NA	12,331	18	0	E	E	E	G	G	E	E	E	E	2	G
R0216	UNL	OR	NA	12,612	19	0	G	G	G	G	G	G	G	G	G	1	G
R0222	UNL	OR	NA	12,823	20	0	G	G	G	G	G	G	G	G	G	1	G
R0232	UNL	OR	NA	13,860	61	0	G	F	F	G	G	G	G	G	F	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0244	UNL	OR	NA	14,894	65	0	G	G	G	G	G	G	G	G	G	1	G
R0247	UNL	RE	NA	14,934	0	0	G	G	G	G	G	G	E	G	E	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0057	UNL	OR	NA	9,287	0	0	F	F	F	F	F	F	F	F	F	1	F
D0059	UNL	OR	NA	9,319	0	0	G	G	G	E	E	G	G	G	G	1	G
D0077	UNL	OR	NA	9,462	0	0	F	F	F	F	F	P	F	F	G	1	F
D0083	UNL	BP	NA	9,486	0	0	G	G	G	G	G	G	G	G	F	1	G
D0092	UNL	BP	NA	9,567	0	0	F	F	F	F	G	F	F	F	F	1	F
D0095	UNL	BP	NA	9,591	0	0	F	G	G	G	G	F	F	G	G	2	F
D0100	LEAD	OR	NA	9,814	39	0	F	F	F	F	F	F	F	F	F	3	F
D0119	LEAD	OR	NA	10,174	21	0	E	E	E	G	E	E	E	E	E	1	E
D0126	LEAD	OR	NA	10,407	20	0	G	G	G	G	E	G	G	G	G	1	E
D0136	LEAD	OR	NA	10,678	19	0	E	E	E	E	E	E	E	E	E	1	E
D0142	LEAD	OR	NA	10,922	18	0	E	E	E	E	E	E	E	E	E	1	E
D0148	LEAD	OR	NA	11,186	17	0	G	E	G	E	E	F	G	G	G	2	G
D0151	LEAD	OR	NA	11,223	0	0	G	E	G	E	E	E	G	E	G	2	G
D0163	LEAD	OR	NA	11,256	0	0	G	G	F	G	G	F	G	G	G	2	G
D0169	LEAD	OR	NA	11,593	37	0	E	E	E	E	E	G	E	E	E	2	F
D0174	LEAD	OR	NA	11,841	4	0	E	E	G	G	G	E	G	G	G	4	F
D0190	UNL	BP	NA	11,876	21	0	E	E	E	E	E	E	E	E	E	2	G
R0200	UNL	OR	NA	11,946	0	0	E	E	E	E	E	E	E	E	E	1	G
R0212	UNL	OR	NA	12,133	19	0	G	G	E	G	G	G	F	G	G	1	G
R0219	UNL	OR	NA	12,347	19	0	G	G	G	G	G	G	G	G	G	2	G
R0224	UNL	OR	NA	12,621	20	0	G	E	E	G	G	G	E	G	G	1	G
R0230	UNL	OR	NA	12,902	41	0	G	G	G	G	G	G	G	G	G	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0243	UNL	OR	NA	13,930	69	0	E	E	E	E	E	E	E	E	E	1	E
R0246	UNL	OR	NA	14,940	71	0	E	E	E	E	E	E	E	E	E	1	E
R0252	UNL	RE	NA	14,990	0	0	G	G	G	G	G	E	E	G	E	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0004	UNL	OR	NA	6,818	7	0	E	E	E	G	G	E	E	E	E	1	G
D0006	UNL	OR	NA	6,857	2	0	G	G	G	G	G	F	G	G	G	1	G
D0007	UNL	OR	NA	6,886	0	0	F	F	F	F	F	F	F	G	G	4	F
D0009	UNL	BP	NA	6,950	0	1	F	F	F	F	G	F	F	F	F	3	F
D0011	UNL	BP	NA	7,014	6	0	G	F	F	F	F	F	F	F	F	3	F
D0014	UNL	BP	NA	7,069	0	0	F	F	F	F	F	F	F	F	F	3	F
D0049	LEAD	OR	NA	7,449	28	0	F	F	F	F	F	F	F	F	F	1	F
D0073	LEAD	OR	NA	7,767	27	0	F	F	F	F	F	F	F	F	F	1	F
D0088	LEAD	OR	NA	7,956	12	0	P	F	P	P	F	P	P	P	F	2	F
D0098	LEAD	OR	NA	8,161	13	0	F	F	F	F	F	F	F	F	F	1	F
D0103	LEAD	OR	NA	8,429	14	0	E	E	E	E	E	E	E	E	E	1	E
D0111	LEAD	OR	NA	8,618	12	0	E	E	E	G	E	G	E	E	E	1	E
D0121	LEAD	OR	NA	8,837	13	0	E	E	E	G	E	E	E	E	E	1	E
D0127	LEAD	OR	NA	9,017	13	0	E	E	E	E	E	E	E	E	E	1	E
D0135	LEAD	OR	NA	9,244	14	0	F	G	G	F	G	F	F	G	G	2	G
D0141	LEAD	OR	NA	9,430	12	0	E	E	E	E	E	E	E	E	E	3	E
D0155	LEAD	OR	NA	9,856	19	0	G	E	F	G	G	G	G	G	G	2	G
D0158	LEAD	OR	NA	9,889	0	0	E	E	G	E	E	E	G	G	G	1	U
D0160	LEAD	OR	NA	9,922	0	0	E	E	G	G	G	E	G	G	G	2	G
D0164	UNL	BP	NA	9,961	19	0	F	E	F	G	G	G	G	F	F	3	F
R0168	UNL	OR	NA	9,993	0	0	E	E	G	G	G	E	G	G	G	2	G
R0176	UNL	OR	NA	10,220	16	0	G	E	G	G	G	E	E	E	E	2	G

AUTOMOTIVE TESTING LABORATORIES, INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0182	UNL	OR	NA	10,490	16	0	E	E	E	E	E	E	E	E	E	1	G
R0187	UNL	OR	NA	10,739	15	0	E	E	E	G	G	E	E	G	E	2	G
R0206	UNL	OR	NA	10,931	16	2	G	G	G	G	G	G	E	E	E	1	G
R0231	UNL	OR	NA	12,015	62	0	G	G	F	G	G	E	E	G	G	1	G
R0245	UNL	OR	NA	13,046	61	0	G	G	G	G	G	G	E	G	E	1	G
R0251	UNL	RE	NA	13,114	0	0	G	E	G	E	E	E	E	E	E	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RESTART PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0018	UNL	OR	NA	7,283	0	0	G	G	G	F	F	F	G	G	G	3	F
D0020	UNL	OR	NA	7,315	5	0	F	F	F	F	F	G	G	G	G	3	F
D0022	UNL	OR	NA	7,349	2	0	F	G	F	F	F	F	F	F	F	2	F
D0027	UNL	BP	NA	7,380	0	0	F	F	F	P	F	F	F	F	F	2	F
D0031	UNL	BP	NA	7,437	6	0	F	F	F	F	F	F	F	F	F	1	F
D0033	UNL	BP	NA	7,492	0	0	F	F	F	F	F	F	F	F	F	1	F
D0054	LEAD	OR	NA	7,955	40	0	F	F	F	F	F	F	F	F	F	1	F
D0082	LEAD	OR	NA	8,266	24	0	G	G	F	F	G	G	G	G	G	1	G
D0094	LEAD	OR	NA	8,358	12	0	P	F	P	F	F	P	P	P	F	1	F
D0101	LEAD	OR	NA	8,528	10	0	G	G	F	F	G	F	G	G	G	3	F
D0107	LEAD	OR	NA	8,727	15	0	E	E	G	E	E	E	E	E	G	1	E
D0113	LEAD	OR	NA	8,897	11	0	G	G	G	G	G	G	G	G	G	2	G
D0122	LEAD	OR	NA	9,213	16	0	G	E	E	G	E	G	G	G	G	1	G
D0124	LEAD	OR	NA	9,363	14	0	G	E	G	E	E	G	G	G	G	1	E
D0140	LEAD	OR	NA	9,627	14	0	G	G	G	G	G	G	G	G	G	1	G
D0146	LEAD	OR	NA	9,842	12	0	E	E	E	E	E	E	E	E	E	2	E
D0156	LEAD	OR	NA	10,098	9	0	G	G	G	G	G	E	E	G	G	1	G
D0159	LEAD	OR	NA	10,134	0	0	G	G	G	G	G	G	E	G	G	1	G
D0172	UNL	BP	NA	10,165	18	0	G	G	G	G	G	G	G	F	F	2	G
R0177	UNL	OR	NA	10,199	0	0	G	E	G	G	G	G	E	E	E	2	G
R0180	UNL	OR	NA	10,385	16	0	G	G	G	G	G	E	G	E	G	1	G
R0186	UNL	OR	NA	10,633	16	0	G	E	E	G	G	E	E	G	G	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0205	UNL	OR	NA	10,864	15	0	G	G	G	G	G	G	E	G	G	1	G
R0211	UNL	OR	NA	11,082	16	0	G	G	F	G	G	G	G	G	G	1	G
R0233	UNL	OR	NA	12,119	67	0	F	G	F	E	G	G	P	F	G	2	G
R0248	UNL	OR	NA	13,149	61	0	G	G	G	G	G	G	G	G	F	1	G
R0253	UNL	RE	NA	13,179	0	0	E	E	E	G	G	E	E	E	E	1	F

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0021	UNL	OR	OR	4,179	5	0	G	G	G	G	G	G	G	G	G	1	G
D0023	UNL	OR	OR	4,210	0	0	G	G	G	G	G	G	G	G	G	1	G
D0026	UNL	OR	OR	4,282	0	0	E	E	E	E	E	E	E	E	E	1	E
D0028	UNL	BP	OR	4,319	8	0	E	E	E	E	E	E	E	E	E	1	E
D0030	UNL	BP	OR	4,345	0	0	G	G	G	G	G	G	G	G	G	1	G
D0032	UNL	BP	OR	4,373	0	0	E	G	G	G	G	G	G	G	G	5	G
D0065	LEAD	OR	OR	4,731	58	0	G	G	G	G	G	G	G	G	G	2	G
D0081	LEAD	OR	OR	4,902	14	0	G	G	G	F	F	F	G	G	G	2	F
D0090	LEAD	OR	OR	5,034	13	0	G	F	G	G	G	P	F	G	G	2	F
D0104	LEAD	OR	OR	5,250	16	0	E	E	E	E	E	E	E	E	E	1	E
D0108	LEAD	OR	OR	5,466	15	0	E	E	E	G	E	E	E	E	E	1	E
D0110	LEAD	OR	OR	5,719	17	0	E	E	E	E	E	E	E	E	E	1	E
D0123	LEAD	OR	OR	5,954	13	0	E	E	E	E	E	E	E	E	E	1	E
D0133	LEAD	OR	OR	6,050	13	0	E	E	E	E	E	E	E	E	E	1	E
D0139	LEAD	OR	OR	6,242	28	0	E	E	E	E	E	E	E	E	E	2	E
D0144	LEAD	OR	OR	6,637	16	0	E	E	E	E	E	E	E	E	E	1	E
D0161	LEAD	OR	OR	6,875	7	0	E	G	E	G	G	E	E	G	G	1	G
D0166	LEAD	OR	OR	6,944	4	0	G	E	G	E	E	E	E	G	G	2	E
D0196	LEAD	OR	OR	7,057	17	0	G	G	E	G	G	G	G	G	G	1	G
D0228	LEAD	OR	OR	7,152	5	0	E	E	E	E	E	E	E	E	E	1	E
R0235	LEAD	BP	OR	7,184	10	0	E	E	E	G	G	G	G	E	E	3	G
R0237	LEAD	BP	OR	7,213	0	0	E	E	E	E	E	E	E	E	E	1	E

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0240	UNL	BP	OR	7,241	18	0	G	G	E	E	E	E	E	G	G	1	G
R0241	UNL	BP	OR	7,269	0	0	E	E	E	E	E	E	E	E	E	1	E
R0249	UNL	BP	NW	7,302	0	0	G	E	G	G	G	G	E	G	E	1	G
R0254	UNL	BP	NW	7,329	0	0	E	E	G	G	G	E	E	E	E	1	E
R0260	UNL	OR	NW	7,358	0	0	G	G	G	G	G	G	G	G	E	2	E
R0261	UNL	OR	OR	7,390	16	0	E	E	E	G	G	E	E	E	E	1	E
R0264	UNL	OR	OR	7,629	13	0	E	E	E	G	G	E	E	E	E	1	E
R0266	UNL	OR	NW	7,666	0	0	E	E	G	G	G	E	E	G	G	1	G
R0269	UNL	OR	OR	7,910	20	0	E	E	E	G	G	E	G	G	E	1	G
R0272	UNL	OR	NW	7,941	0	0	E	E	E	E	E	E	E	E	E	1	E
R0280	UNL	OR	OR	8,144	15	0	E	E	E	G	G	E	E	E	E	1	G
R0282	UNL	OR	NW	8,174	0	0	E	G	G	G	G	E	G	G	G	1	G
R0285	UNL	OR	OR	8,473	23	0	G	E	E	G	G	G	G	G	G	1	G
R0286	UNL	OR	NW	8,504	9	0	G	E	G	G	G	G	G	G	G	1	G
R0293	UNL	OR	NW	9,369	52	0	G	E	G	G	G	E	G	G	G	1	G
R0297	UNL	OR	OR	9,543	4	0	G	G	G	G	G	G	G	G	G	1	G
R0299	UNL	BP	OR	9,600	0	0	G	G	G	E	E	G	G	G	G	1	E
R0300	UNL	BP	NW	9,634	0	0	E	E	E	G	G	E	E	E	E	1	G
R0303	UNL	RE	OR	9,735	16	0	E	E	E	G	G	E	E	E	E	1	G
R0306	UNL	RE	NW	9,846	0	0	E	E	E	E	E	E	E	E	E	1	E

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0039	UNL	OR	OR	5,795	0	0	G	G	G	G	G	G	G	G	G	3	G
D0044	UNL	OR	OR	5,831	0	0	G	E	G	G	G	F	F	F	F	1	G
D0055	UNL	OR	OR	5,907	0	0	F	F	F	F	F	F	F	F	F	1	F
D0067	UNL	BP	OR	6,002	5	0	F	G	F	F	F	F	F	F	F	1	G
D0078	UNL	BP	OR	6,075	0	0	P	F	P	F	F	P	P	P	F	1	F
D0080	UNL	BP	OR	6,101	0	0	G	F	F	F	F	P	F	F	G	2	F
D0091	LEAD	OR	OR	6,371	26	0	F	G	G	G	G	P	F	G	G	1	G
D0096	LEAD	OR	OR	6,597	13	0	G	G	F	F	F	G	G	G	G	1	F
D0099	LEAD	OR	OR	6,853	12	0	G	G	G	G	G	G	G	G	G	1	G
D0106	LEAD	OR	OR	7,036	13	0	E	E	E	G	E	E	E	E	E	1	E
D0120	LEAD	OR	OR	7,275	14	0	E	E	E	G	E	E	E	E	E	1	E
D0134	LEAD	OR	OR	7,516	12	0	E	E	E	G	G	G	E	E	E	1	G
D0138	LEAD	OR	OR	7,641	13	0	E	E	E	G	E	E	E	E	E	1	E
D0143	LEAD	OR	OR	7,934	17	0	G	E	G	G	G	E	E	G	G	2	G
D0150	LEAD	OR	OR	8,144	3	0	E	E	E	G	G	E	E	E	E	1	E
D0153	LEAD	OR	OR	8,174	4	0	E	E	E	E	E	E	G	E	G	1	G
R0175	LEAD	BP	OR	8,220	4	0	G	E	G	F	F	E	E	G	E	2	F
R0179	LEAD	BP	OR	8,250	0	0	G	G	G	G	G	G	G	G	G	1	G
R0183	UNL	BP	OR	8,280	14	0	E	E	E	G	G	E	E	E	E	1	E
R0185	UNL	BP	OR	8,309	0	0	E	E	E	F	F	E	E	E	E	1	F
R0193	UNL	BP	NW	8,339	0	0	G	E	G	G	G	G	E	G	G	1	G
R0198	UNL	BP	NW	8,380	0	0	G	G	G	G	G	E	G	E	E	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0202	UNL	OR	NW	8,406	0	0	E	E	E	G	G	E	E	E	E	1	G
R0207	UNL	OR	OR	8,445	0	0	G	E	G	F	F	E	G	G	G	1	G
R0213	UNL	OR	OR	8,730	30	0	G	G	G	G	G	G	G	G	G	1	G
R0215	UNL	OR	NW	8,760	0	0	G	E	E	G	G	G	E	G	E	1	G
R0218	UNL	OR	OR	8,927	15	0	G	E	E	G	G	G	E	G	E	1	G
R0221	UNL	OR	NW	8,958	0	0	G	E	G	G	G	G	E	G	E	2	G
R0225	UNL	OR	OR	9,164	30	0	E	E	E	E	E	E	E	E	E	1	E
R0227	UNL	OR	NW	9,212	0	0	E	E	E	E	E	E	E	E	E	1	E
R0236	UNL	OR	OR	9,503	20	0	G	G	G	G	G	G	E	G	G	1	G
R0238	UNL	OR	NW	9,532	0	0	E	E	E	E	E	E	E	E	E	1	E
R0255	UNL	OR	OR	10,562	65	0	G	G	G	G	G	G	G	G	G	1	E
R0259	UNL	OR	NW	10,610	5	0	G	G	G	G	G	G	G	G	G	1	G
R0265	UNL	OR	OR	11,642	56	0	E	E	G	F	F	E	G	G	E	1	F
R0268	UNL	OR	NW	11,672	0	0	E	E	E	E	E	E	E	E	E	1	E
R0271	UNL	BP	OR	11,701	0	0	G	G	G	G	G	G	G	G	G	1	G
R0273	UNL	BP	NW	11,728	0	0	G	G	G	G	G	G	G	G	G	1	G
R0275	UNL	RE	OR	11,753	0	0	G	E	G	F	F	G	G	G	G	1	F
R0279	UNL	RE	NW	11,847	14	0	G	G	G	G	G	G	G	G	G	1	G

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
D0043	UNL	OR	OR	5,182	0	1	P	F	P	P	F	P	P	P	P	2	F
D0056	UNL	OR	OR	5,271	0	0	P	F	F	F	F	F	F	F	F	1	F
D0060	UNL	OR	OR	5,299	0	0	P	F	P	F	F	P	P	F	F	1	F
D0064	UNL	BP	OR	5,330	0	0	F	F	F	F	F	F	F	F	F	1	F
D0075	UNL	BP	OR	5,384	0	0	P	F	P	F	F	P	P	F	F	1	F
D0076	UNL	BP	OR	5,408	0	0	P	F	P	F	F	P	P	P	F	1	F
D0097	LEAD	OR	OR	5,646	14	0	F	F	P	F	F	P	P	F	F	1	F
D0105	LEAD	OR	OR	5,870	26	2	G	E	G	G	E	G	G	G	G	1	E
D0112	LEAD	OR	OR	6,121	12	0	F	G	F	E	E	P	F	G	G	1	G
D0131	LEAD	OR	OR	6,341	15	1	G	E	G	G	E	F	G	G	G	1	E
D0137	LEAD	OR	OR	6,606	13	0	G	E	G	G	E	G	G	G	F	1	E
D0145	LEAD	OR	OR	6,831	14	0	G	E	G	G	G	G	G	G	G	1	G
D0147	LEAD	OR	OR	7,004	0	0	F	G	F	G	E	G	F	F	G	2	G
D0149	LEAD	OR	OR	7,024	0	1	P	G	P	G	G	P	F	F	F	1	G
D0152	LEAD	OR	OR	7,057	3	0	G	G	G	G	F	G	E	G	G	1	E
D0167	LEAD	OR	OR	7,369	28	0	P	F	F	F	F	G	G	F	F	3	F
D0170	LEAD	OR	OR	7,589	4	0	P	E	G	F	F	E	F	P	G	2	F
D0188	LEAD	OR	OR	7,959	31	0	G	F	G	G	G	G	G	F	F	2	G
R0195	LEAD	BP	OR	8,006	0	0	F	E	G	G	G	G	G	F	G	1	G
R0197	LEAD	BP	OR	8,034	0	0	G	G	G	G	G	F	G	G	G	1	G
R0201	UNL	BP	OR	8,062	17	0	G	G	G	G	G	G	G	G	G	1	G
R0203	UNL	BP	OR	8,090	0	0	E	E	E	G	G	E	E	E	E	1	E

APPENDIX A (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE PREPARATORY DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

						CONSTANT SPEED PHASE						ACCELERATION FROM STOP PHASE				RE-START PHASE	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	NS	AQ	CQ	SA	IO	IF	1/4	1/2	2/3	3/4	CT	IQ
R0214	UNL	BP	NW	8,125	0	0	F	G	G	G	G	G	G	G	G	1	G
R0217	UNL	BP	NW	8,155	0	0	G	G	G	G	G	G	G	G	G	1	G
R0220	UNL	OR	NW	8,183	0	0	G	G	G	G	G	G	G	G	G	1	G
R0223	UNL	OR	OR	8,215	12	0	G	E	G	G	G	G	E	G	E	1	G
R0229	UNL	OR	OR	8,513	15	0	P	F	P	F	G	P	P	F	F	2	F
R0234	UNL	OR	NW	8,550	0	0	G	E	E	E	E	G	E	E	E	1	E
R0239	UNL	OR	OR	8,763	14	0	E	E	E	E	E	G	G	G	G	1	G
R0242	UNL	OR	NW	8,794	0	0	G	G	G	G	G	G	G	G	G	1	G
R0250	UNL	OR	OR	9,002	14	1	F	G	G	G	G	P	P	P	P	1	G
R0258	UNL	OR	NW	9,039	0	0	F	G	G	G	G	F	F	F	F	1	G
R0262	UNL	OR	OR	9,240	14	0	F	G	G	G	G	F	F	F	F	1	G
R0263	UNL	OR	NW	9,277	0	0	F	G	F	G	G	G	G	G	G	1	G
R0267	UNL	OR	OR	10,305	52	0	F	F	F	G	G	F	G	F	F	1	G
R0270	UNL	OR	NW	10,335	0	0	F	G	F	G	G	F	G	F	G	1	G
R0274	UNL	OR	OR	11,365	57	0	G	G	F	F	F	F	F	F	F	1	G
R0276	UNL	OR	NW	11,392	0	0	P	F	G	F	G	F	G	F	F	1	G
R0281	UNL	BP	OR	11,422	0	0	G	E	G	E	E	G	G	G	G	1	E
R0283	UNL	BP	NW	11,450	0	0	P	F	F	G	G	F	F	F	F	1	G
R0287	UNL	RE	OR	11,482	10	0	G	G	F	G	G	F	G	G	G	1	E
R0288	UNL	RE	NW	11,514	0	0	P	F	F	G	G	F	F	F	G	1	G

CATALYST DETERIORATION/REJUVENATION

APPENDIX B - LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATION

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

COLD START & IDLE PHASE

CT - Initial cranking time in seconds

ND - Number of engine die-outs after start

NS - Number of engine stalls after gear selection

HL - Hesitation, lag upon slight acceleration (Y: yes; N: no)

IQ - Idle quality (E: excellent; G: good; F: fair; P: poor; U: fail)

DRIVE-AWAY PHASE

N1 - Number of stalls or pass-outs upon slight acceleration to road speed

A1 - Acceleration quality (E: excellent; G: good; F: fair; P: poor; U: fail)

I1 - Idle quality after 0.2 mile @ stop (E: excellent; G: good; F: fair; P: poor; U: fail)

N2 - Number of stalls or pass-outs upon slight acceleration to speed

A2 - Acceleration quality after 0.2 mile @ stop (E: excellent G: good; F: fair; P: poor; U: fail)

I2 - Idle quality after 2.6 mile @ stop (E: excellent; G: good; F: fair; P: poor; U: fail)

Pass-outs are defined as restart from "off idle" stall

Die-outs are defined as restart from stall at idle

The codes for idle, acceleration and cruise quality are defined as follows:

E - Excellent - No trace of undesirable elements (smooth, even, responsive)

G - Good - Slight trace, small indication of an undesirable element (initial unevenness, roughness, hesitation, quickly overcome)

F - Fair - Undesirable element exists yet reliability is retained (only intermittent misfire, surging, hesitation)

P - Poor - Undesirable element exists which affects reliability or driver confidence (steady misfire, roughness, lack of power, response)

U - Fail - Extremely unreliable, possible unsafe conditions exist (frequent stalling, die-outs on acceleration, lack of throttle response)

The Cold Start and Idle Phase and the Drive-Away Phase are performed on the dynamometer during the Cold Transient portion of the Federal Testing Procedure.

APPENDIX B

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	COLD START & IDLE PHASE CT	ND	NS	HL	IQ	DRIVE-AWAY PHASE N1	A1	I1	N2	A2	I2
D0001	UNL	OR	NA	8,316	0	1	0	0	Y	G	1	G	G	0	G	G
D0003	UNL	OR	NA	8,394	0	2	0	0	Y	F	0	F	F	0	G	G
D0005	UNL	OR	NA	8,442	8	1	0	0	Y	G	0	G	G	0	E	G
D0008	UNL	BP	NA	8,694	5	1	0	0	Y	G	0	F	G	0	G	E
D0010	UNL	BP	NA	8,733	0	2	0	1	Y	P	0	F	F	0	F	G
D0013	UNL	BP	NA	8,760	6	2	0	1	Y	F	0	F	F	0	G	F
D0034	LEAD	OR	NA	9,046	40	1	1	0	Y	P	0	P	F	0	G	G
D0038	LEAD	OR	NA	9,307	15	2	0	1	N	G	0	F	G	0	G	G
D0072	LEAD	OR	NA	9,770	41	2	0	0	Y	F	0	F	F	0	G	G
D0093	LEAD	OR	NA	10,069	20	1	0	1	Y	F	0	G	G	0	G	G
D0109	UNL	BP	NA	10,446	72	1	0	1	N	P	0	F	F	0	G	G
D0118	UNL	RE	NA	10,532	0	1	0	1	Y	F	0	G	G	0	G	G
R0154	LEAD	OR	NA	11,750	91	3	0	1	Y	G	1	F	G	0	F	G
R0157	LEAD	OR	NA	11,795	3	1	1	1	Y	G	0	G	G	0	G	G
R0165	LEAD	OR	NA	11,831	6	0	0	0	N	G	0	G	G	0	G	G
R0173	UNL	BP	NA	11,877	22	1	0	0	Y	F	1	F	G	0	F	G
R0178	UNL	OR	NA	11,909	0	1	0	0	Y	G	0	G	G	0	G	G
R0184	UNL	OR	NA	12,118	17	2	0	0	N	F	0	F	F	0	F	F
R0189	UNL	OR	NA	12,331	18	1	0	1	Y	F	0	G	F	0	G	G
R0216	UNL	OR	NA	12,612	19	1	0	0	Y	G	0	F	G	0	F	G
R0222	UNL	OR	NA	12,823	20	1	0	0	Y	G	0	G	G	0	G	G
R0232	UNL	OR	NA	13,860	61	1	0	0	N	G	0	G	G	0	G	G

AUTOMOTIVE TESTING LABORATORIES, INC.
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APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
						CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0244	UNL	OR	NA	14,894	65	10	0	1	N	G	1	G	G	0	G	G
R0247	UNL	RE	NA	14,934	0	4	0	1	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

						COLD START & - IDLE PHASE -					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
D0057	UNL	OR	NA	9,287	0	5	1	0	Y	F	0	G	G	0	G	G
D0059	UNL	OR	NA	9,319	0	2	0	1	N	P	0	F	F	0	F	F
D0077	UNL	OR	NA	9,462	0	2	0	0	N	P	0	F	F	0	G	G
D0083	UNL	BP	NA	9,486	0	1	0	0	Y	F	0	G	G	0	G	G
D0092	UNL	BP	NA	9,567	0	1	0	0	N	G	0	G	G	0	G	G
D0095	UNL	BP	NA	9,591	0	2	0	0	N	P	0	F	F	0	G	F
D0100	LEAD	OR	NA	9,814	39	1	0	0	N	P	0	F	F	0	G	G
D0119	LEAD	OR	NA	10,174	21	1	0	0	Y	G	0	G	G	0	G	G
D0126	LEAD	OR	NA	10,407	20	1	0	0	N	F	0	G	F	0	E	F
D0136	LEAD	OR	NA	10,678	19	2	0	1	N	F	0	G	G	0	E	G
D0142	LEAD	OR	NA	10,922	18	2	0	1	Y	F	0	G	G	0	G	E
D0148	LEAD	OR	NA	11,186	17	1	0	1	N	F	0	G	G	0	G	G
D0151	LEAD	OR	NA	11,223	0	3	0	0	N	G	0	G	G	0	G	G
D0163	LEAD	OR	NA	11,256	0	1	2	0	Y	G	0	G	G	0	G	G
D0169	LEAD	OR	NA	11,593	37	1	0	0	N	G	0	G	G	0	G	G
D0174	LEAD	OR	NA	11,841	4	1	0	0	N	G	0	G	G	0	G	G
D0190	UNL	BP	NA	11,876	21	1	0	0	N	G	0	G	G	0	G	G
R0200	UNL	OR	NA	11,946	0	1	0	0	N	G	0	E	G	0	G	G
R0212	UNL	OR	NA	12,133	19	1	0	0	N	G	0	G	G	0	G	G
R0219	UNL	OR	NA	12,347	19	1	0	0	N	G	0	G	G	0	G	G
R0224	UNL	OR	NA	12,621	20	1	0	0	Y	G	0	G	G	0	G	G
R0230	UNL	OR	NA	12,902	41	1	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

						COLD START & - IDLE PHASE -					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0243	UNL	OR	NA	13,930	69	1	0	0	N	G	0	G	G	0	G	G
R0246	UNL	OR	NA	14,940	71	1	0	0	N	G	0	G	G	0	G	G
R0252	UNL	RE	NA	14,990	0	1	0	0	N	G	0	G	G	0	G	G

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	COLD START & - IDLE PHASE - CT	ND	NS	HL	IQ	DRIVE-AWAY PHASE N1	A1	I1	N2	A2	I2
D0004	UNL	OR	NA	6,818	7	2	0	0	Y	F	0	F	F	0	F	F
D0006	UNL	OR	NA	6,857	2	6	1	0	Y	G	0	G	G	0	E	G
D0007	UNL	OR	NA	6,886	0	7	0	0	Y	G	0	G	G	0	G	G
D0009	UNL	BP	NA	6,950	0	8	0	0	Y	G	0	F	G	0	G	G
D0011	UNL	BP	NA	7,014	6	2	0	0	N	G	0	F	G	0	G	G
D0014	UNL	BP	NA	7,069	0	10	0	0	Y	G	0	G	G	0	G	G
D0049	LEAD	OR	NA	7,449	28	8	0	0	N	G	0	G	G	0	E	E
D0073	LEAD	OR	NA	7,767	27	2	1	0	Y	F	0	F	G	0	G	E
D0088	LEAD	OR	NA	7,956	12	7	0	0	N	P	0	G	F	0	G	G
D0098	LEAD	OR	NA	8,161	13	6	0	0	N	P	0	F	F	0	G	G
D0103	LEAD	OR	NA	8,429	14	5	1	0	N	F	0	G	G	0	G	G
D0111	LEAD	OR	NA	8,618	12	1	1	0	N	P	0	F	G	0	G	G
D0121	LEAD	OR	NA	8,837	13	1	0	0	Y	F	0	G	G	0	G	G
D0127	LEAD	OR	NA	9,017	13	7	0	0	N	F	0	G	G	0	E	G
D0135	LEAD	OR	NA	9,244	14	2	0	0	N	P	0	F	G	0	G	G
D0141	LEAD	OR	NA	9,430	12	1	0	0	N	F	0	G	G	0	E	G
D0155	LEAD	OR	NA	9,856	19	10	0	0	N	G	0	G	G	0	G	G
D0158	LEAD	OR	NA	9,889	0	10	1	1	N	G	0	G	G	0	G	G
D0160	LEAD	OR	NA	9,922	0	1	0	0	N	G	0	G	G	0	G	G
D0164	UNL	BP	NA	9,961	19	1	0	0	N	G	0	G	G	0	G	G
R0168	UNL	OR	NA	9,993	0	1	0	0	N	G	0	G	G	0	G	G
R0176	UNL	OR	NA	10,220	16	1	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
						CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0182	UNL	OR	NA	10,490	16	1	0	0	N	G	0	G	G	0	G	G
R0187	UNL	OR	NA	10,739	15	1	0	0	N	G	0	G	G	0	G	G
R0206	UNL	OR	NA	10,931	16	8	0	0	Y	F	0	G	G	0	G	G
R0231	UNL	OR	NA	12,015	62	1	0	0	N	G	0	G	G	0	G	G
R0245	UNL	OR	NA	13,046	61	1	0	0	N	G	0	G	G	0	G	U
R0251	UNL	RE	NA	13,114	0	2	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

						COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
D0018	UNL	OR	NA	7,283	0	1	0	0	Y	F	0	G	G	0	G	G
D0020	UNL	OR	NA	7,315	5	2	0	1	Y	F	0	F	G	0	G	G
D0022	UNL	OR	NA	7,349	2	3	0	0	Y	F	0	F	F	0	G	G
D0027	UNL	BP	NA	7,380	0	2	1	0	N	G	0	G	G	0	G	G
D0031	UNL	BP	NA	7,437	6	2	0	0	N	F	0	F	F	0	F	F
D0033	UNL	BP	NA	7,492	0	1	0	0	Y	F	0	P	F	0	F	G
D0054	LEAD	OR	NA	7,955	40	2	0	0	N	P	0	F	F	0	G	G
D0082	LEAD	OR	NA	8,266	24	1	0	0	N	F	0	F	F	0	G	G
D0094	LEAD	OR	NA	8,358	12	1	0	1	Y	F	0	G	F	0	G	G
D0101	LEAD	OR	NA	8,528	10	1	0	0	Y	F	0	F	F	0	G	G
D0107	LEAD	OR	NA	8,727	15	1	0	0	N	G	0	E	E	0	E	E
D0113	LEAD	OR	NA	8,897	11	1	0	0	Y	P	0	F	F	0	G	G
D0122	LEAD	OR	NA	9,213	16	3	0	0	N	P	0	G	G	0	G	G
D0124	LEAD	OR	NA	9,363	14	3	0	0	Y	F	0	F	G	0	G	E
D0140	LEAD	OR	NA	9,627	14	1	0	0	N	G	0	G	G	0	E	G
D0146	LEAD	OR	NA	9,842	12	2	0	0	N	G	0	E	G	0	E	E
D0156	LEAD	OR	NA	10,098	9	5	0	0	N	G	0	G	G	0	G	G
D0159	LEAD	OR	NA	10,134	0	3	0	0	N	G	0	G	G	0	G	G
D0172	UNL	BP	NA	10,165	18	1	0	0	N	F	0	F	G	0	G	G
R0177	UNL	OR	NA	10,199	0	3	0	0	N	G	0	G	G	0	G	G
R0180	UNL	OR	NA	10,385	16	1	0	0	Y	F	0	F	F	0	F	F
R0186	UNL	OR	NA	10,633	16	1	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
						CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0205	UNL	OR	NA	10,864	15	1	0	0	N	G	0	G	G	0	G	G
R0211	UNL	OR	NA	11,082	16	1	0	0	Y	G	0	F	G	0	F	G
R0233	UNL	OR	NA	12,119	67	3	0	0	N	G	0	G	G	0	G	G
R0248	UNL	OR	NA	13,149	61	3	0	0	N	F	0	F	F	0	F	F
R0253	UNL	RE	NA	13,179	0	1	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

						COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
D0021	UNL	OR	OR	4,179	5	2	0	0	N	G	0	G	G	0	G	G
D0023	UNL	OR	OR	4,210	0	2	0	0	N	G	0	G	E	0	G	G
D0026	UNL	OR	OR	4,282	0	2	1	0	N	F	0	G	G	0	G	G
D0028	UNL	BP	OR	4,319	8	8	1	0	N	F	0	G	G	0	G	G
D0030	UNL	BP	OR	4,345	0	1	0	0	N	G	0	E	G	0	E	G
D0032	UNL	BP	OR	4,373	0	3	0	0	N	F	0	F	F	0	F	F
D0065	LEAD	OR	OR	4,731	58	1	0	0	N	F	0	F	F	0	G	G
D0081	LEAD	OR	OR	4,902	14	2	0	0	N	F	0	F	F	0	G	G
D0090	LEAD	OR	OR	5,034	13	4	0	0	N	F	0	G	G	0	G	G
D0104	LEAD	OR	OR	5,250	16	3	0	0	N	F	0	G	G	0	G	G
D0108	LEAD	OR	OR	5,466	15	1	0	0	N	P	0	F	F	0	G	G
D0110	LEAD	OR	OR	5,719	17	1	0	0	N	F	0	G	G	0	G	G
D0123	LEAD	OR	OR	5,954	13	1	0	0	N	F	0	G	G	0	G	E
D0133	LEAD	OR	OR	6,050	13	3	0	0	N	F	0	G	G	0	E	G
D0139	LEAD	OR	OR	6,242	28	1	0	0	N	G	0	G	G	0	G	G
D0144	LEAD	OR	OR	6,637	16	3	0	0	N	G	0	E	E	0	E	E
D0161	LEAD	OR	OR	6,875	7	1	0	0	N	G	0	G	G	0	G	G
D0166	LEAD	OR	OR	6,944	4	1	1	0	N	G	0	G	G	0	G	G
D0196	LEAD	OR	OR	7,057	17	3	1	0	N	G	0	G	G	0	G	G
D0228	LEAD	OR	OR	7,152	5	1	0	0	N	G	0	G	G	0	G	G
R0235	LEAD	BP	OR	7,184	10	4	4	0	N	G	0	G	G	0	G	G
R0237	LEAD	BP	OR	7,213	0	1	3	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

						COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0240	UNL	BP	OR	7,241	18	1	0	0	N	G	0	G	G	0	G	G
R0241	UNL	BP	OR	7,269	0	1	1	0	N	G	0	G	G	0	G	G
R0249	UNL	BP	NW	7,302	0	1	0	0	N	G	0	G	G	0	G	G
R0254	UNL	BP	NW	7,329	0	1	0	0	N	G	0	G	G	0	G	G
R0260	UNL	OR	NW	7,358	0	1	0	0	N	G	0	G	G	0	G	G
R0261	UNL	OR	OR	7,390	16	1	0	0	N	G	0	G	G	0	G	G
R0264	UNL	OR	OR	7,629	13	1	0	0	N	G	0	G	G	0	G	G
R0266	UNL	OR	NW	7,666	0	1	0	0	N	G	0	G	G	0	G	G
R0269	UNL	OR	OR	7,910	20	1	0	0	N	G	0	G	G	0	G	G
R0272	UNL	OR	NW	7,941	0	1	1	0	N	G	0	G	G	0	G	G
R0280	UNL	OR	OR	8,144	15	1	1	0	N	G	0	G	G	0	G	G
R0282	UNL	OR	NW	8,174	0	1	0	0	N	G	0	G	G	0	G	G
R0285	UNL	OR	OR	8,473	23	1	0	0	N	G	0	G	G	0	G	G
R0286	UNL	OR	NW	8,504	9	1	0	0	N	G	0	G	G	0	G	G
R0293	UNL	OR	NW	9,369	52	1	0	0	N	G	0	G	G	0	G	G
R0297	UNL	OR	OR	9,543	4	1	0	0	N	G	0	G	G	0	G	G
R0299	UNL	BP	OR	9,600	0	1	0	0	N	G	0	G	G	0	G	G
R0300	UNL	BP	NW	9,634	0	1	0	0	N	G	0	G	G	0	G	G
R0303	UNL	RE	OR	9,735	16	2	0	0	N	G	0	G	G	0	G	G
R0306	UNL	RE	NW	9,846	0	1	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
						CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
D0039	UNL	OR	OR	5,795	0	3	0	0	Y	F	0	F	F	0	G	G
D0044	UNL	OR	OR	5,831	0	2	0	0	N	F	0	F	G	0	G	G
D0055	UNL	OR	OR	5,907	0	2	0	0	N	F	0	F	G	0	G	G
D0067	UNL	BP	OR	6,002	5	2	0	0	N	F	0	G	F	0	G	G
D0078	UNL	BP	OR	6,075	0	2	0	0	N	F	0	F	F	0	G	G
D0080	UNL	BP	OR	6,101	0	2	0	0	N	F	0	G	G	0	G	G
D0091	LEAD	OR	OR	6,371	26	3	0	0	N	F	0	F	F	0	G	F
D0096	LEAD	OR	OR	6,597	13	3	0	0	N	F	0	G	G	0	G	G
D0099	LEAD	OR	OR	6,853	12	3	0	0	N	F	0	G	G	0	E	E
D0106	LEAD	OR	OR	7,036	13	3	0	0	N	F	0	G	G	0	G	E
D0120	LEAD	OR	OR	7,275	14	3	0	0	N	F	0	G	E	0	E	E
D0134	LEAD	OR	OR	7,516	12	3	0	0	N	G	0	E	E	0	E	E
D0138	LEAD	OR	OR	7,641	13	2	0	0	N	F	0	G	G	0	G	G
D0143	LEAD	OR	OR	7,934	17	2	0	0	N	F	0	G	G	0	G	G
D0150	LEAD	OR	OR	8,144	3	2	0	0	N	G	0	G	G	0	G	G
D0153	LEAD	OR	OR	8,174	4	3	0	0	Y	G	0	G	G	0	G	G
R0175	LEAD	BP	OR	8,220	4	2	0	0	Y	G	0	G	G	0	G	G
R0179	LEAD	BP	OR	8,250	0	2	0	0	N	G	0	G	G	0	G	G
R0183	UNL	BP	OR	8,280	14	2	0	0	N	G	0	G	G	0	G	G
R0185	UNL	BP	OR	8,309	0	1	0	0	N	G	0	G	G	0	G	G
R0193	UNL	BP	NW	8,339	0	2	0	1	N	G	0	G	G	0	G	G
R0198	UNL	BP	NW	8,380	0	6	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

						COLD START & - IDLE PHASE -					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0202	UNL	OR	NW	8,406	0	1	0	0	N	G	0	G	G	0	G	G
R0207	UNL	OR	OR	8,445	0	1	0	0	N	G	0	G	G	0	G	G
R0213	UNL	OR	OR	8,730	30	3	0	0	Y	G	0	G	G	0	G	G
R0215	UNL	OR	NW	8,760	0	2	0	0	N	G	0	G	G	0	G	G
R0218	UNL	OR	OR	8,927	15	1	0	0	N	G	0	G	G	0	G	G
R0221	UNL	OR	NW	8,958	0	2	0	0	Y	G	0	G	G	0	G	G
R0225	UNL	OR	OR	9,164	30	1	0	0	N	G	0	G	G	0	G	G
R0227	UNL	OR	NW	9,212	0	1	0	0	N	G	0	G	G	0	G	G
R0236	UNL	OR	OR	9,503	20	2	0	0	N	G	0	G	G	0	G	G
R0238	UNL	OR	NW	9,532	0	1	0	0	N	G	0	G	G	0	G	G
R0255	UNL	OR	OR	10,562	65	3	0	0	Y	G	0	G	G	0	G	G
R0259	UNL	OR	NW	10,610	5	1	0	0	N	G	0	G	G	0	G	G
R0265	UNL	OR	OR	11,642	56	2	0	0	Y	G	0	G	G	0	G	G
R0268	UNL	OR	NW	11,672	0	1	0	0	N	G	0	G	G	0	G	G
R0271	UNL	BP	OR	11,701	0	1	0	0	N	G	0	G	G	0	G	G
R0273	UNL	BP	NW	11,728	0	1	0	0	N	G	0	G	G	0	G	G
R0275	UNL	RE	OR	11,753	0	1	0	0	N	G	0	G	G	0	G	G
R0279	UNL	RE	NW	11,847	14	1	0	0	N	G	0	G	G	0	G	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

						COLD START & - IDLE PHASE -					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
D0043	UNL	OR	OR	5,182	0	1	0	0	Y	F	1	F	F	0	F	G
D0056	UNL	OR	OR	5,271	0	4	1	0	Y	F	0	F	F	0	G	G
D0060	UNL	OR	OR	5,299	0	2	0	1	N	P	0	P	F	0	F	F
D0064	UNL	BP	OR	5,330	0	8	0	1	Y	P	0	F	F	0	G	F
D0075	UNL	BP	OR	5,384	0	1	0	0	Y	P	0	P	F	0	F	F
D0076	UNL	BP	OR	5,408	0	1	0	0	Y	P	0	F	F	0	F	F
D0097	LEAD	OR	OR	5,646	14	8	0	0	Y	P	0	F	F	0	F	F
D0105	LEAD	OR	OR	5,870	26	1	0	0	Y	F	0	F	F	0	G	G
D0112	LEAD	OR	OR	6,121	12	1	1	0	Y	P	0	P	F	0	F	F
D0131	LEAD	OR	OR	6,341	15	2	0	0	Y	F	0	G	G	0	G	G
D0137	LEAD	OR	OR	6,606	13	1	0	0	Y	F	0	F	F	0	G	G
D0145	LEAD	OR	OR	6,831	14	2	0	0	Y	F	0	E	G	0	E	E
D0147	LEAD	OR	OR	7,004	0	1	0	0	Y	F	0	F	F	0	G	G
D0149	LEAD	OR	OR	7,024	0	1	0	0	Y	F	0	P	F	0	P	F
D0152	LEAD	OR	OR	7,057	3	3	1	0	Y	G	0	G	G	1	F	G
D0167	LEAD	OR	OR	7,369	28	1	0	0	Y	G	0	G	G	0	F	G
D0170	LEAD	OR	OR	7,589	4	1	0	0	Y	F	0	F	F	0	F	F
D0188	LEAD	OR	OR	7,959	31	7	0	0	Y	F	3	F	F	0	F	F
R0195	LEAD	BP	OR	8,006	0	1	0	0	Y	P	1	P	F	0	P	F
R0197	LEAD	BP	OR	8,034	0	1	1	0	Y	P	0	P	F	0	F	F
R0201	UNL	BP	OR	8,062	17	9	0	0	Y	G	0	P	F	0	P	F
R0203	UNL	BP	OR	8,090	0	2	0	0	Y	F	0	P	F	0	F	G

APPENDIX B (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF VEHICLE DYNAMOMETER DRIVEABILITY EVALUATIONS

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

						COLD START & IDLE PHASE					DRIVE-AWAY PHASE					
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	CT	ND	NS	HL	IQ	N1	A1	I1	N2	A2	I2
R0214	UNL	BP	NW	8,125	0	3	0	0	Y	G	0	F	G	0	F	G
R0217	UNL	BP	NW	8,155	0	4	0	0	Y	G	0	F	G	0	F	G
R0220	UNL	OR	NW	8,183	0	4	0	0	Y	G	0	F	G	0	F	G
R0223	UNL	OR	OR	8,215	12	3	0	0	Y	G	0	G	G	0	G	G
R0229	UNL	OR	OR	8,513	15	6	0	0	Y	G	0	F	G	0	G	G
R0234	UNL	OR	NW	8,550	0	5	0	0	Y	F	0	G	G	0	G	G
R0239	UNL	OR	OR	8,763	14	3	0	0	Y	G	0	G	G	0	G	G
R0242	UNL	OR	NW	8,794	0	6	0	0	Y	G	0	G	G	0	G	G
R0250	UNL	OR	OR	9,002	14	2	0	0	Y	G	0	G	G	0	G	G
R0258	UNL	OR	NW	9,039	0	3	0	0	Y	G	0	G	G	0	G	G
R0262	UNL	OR	OR	9,240	14	4	0	0	Y	G	0	F	G	0	G	G
R0263	UNL	OR	NW	9,277	0	2	0	0	Y	G	0	F	G	0	G	G
R0267	UNL	OR	OR	10,305	52	3	0	0	Y	G	0	G	G	0	G	G
R0270	UNL	OR	NW	10,335	0	3	0	0	Y	G	4	P	G	0	F	G
R0274	UNL	OR	OR	11,365	57	1	0	2	N	G	0	F	G	0	G	G
R0276	UNL	OR	NW	11,392	0	2	0	0	Y	G	0	G	G	0	G	G
R0281	UNL	BP	OR	11,422	0	1	0	0	Y	G	0	G	G	0	G	G
R0283	UNL	BP	NW	11,450	0	1	0	1	Y	G	0	F	G	0	G	G
R0287	UNL	RE	OR	11,482	10	1	0	0	Y	G	2	F	G	0	G	G
R0288	UNL	RE	NW	11,514	0	1	0	0	Y	G	0	F	G	0	F	G

CATALYST DETERIORATION/REJUVENATION

APPENDIX C - LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

TEST - Test type (indicates the portion of the test or composite)

CT - Cold transient portion of test
CS - Cold stabilized portion of test
HT - Hot transient portion of test
75 - 1975 Federal Test Procedure composite

EMISSION RESULTS
(gr/mi) - Emission results in grams per mile

HC - Hydrocarbon emissions in grams per mile
CO - Carbon monoxide emissions in grams per mile
CO_2 - Carbon dioxide emissions in grams per mile
NOxc - Oxides of nitrogen emissions corrected for humidity in grams per mile

FUEL ECON. MPG - Fuel economy in miles per gallon, calculated by the carbon balance method

APPENDIX C

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0001	UNL	OR	NA	8,316	0	05/16/79	CT	2.09	21.3	635.9	1.86	13.13
							CS	0.27	2.5	625.7	1.39	14.08
							HT	0.49	5.6	565.2	2.23	15.42
							75	0.71	7.2	611.3	1.72	14.20
D0003	UNL	OR	NA	8,394	0	05/21/79	CT	1.68	18.7	613.9	1.67	13.68
							CS	0.24	1.7	599.1	1.20	14.73
							HT	0.57	5.2	519.2	1.87	16.77
							75	0.62	6.1	580.4	1.48	14.99
D0005	UNL	OR	NA	8,442	8	05/23/79	CT	1.85	21.7	618.8	1.86	13.47
							CS	0.29	1.5	595.5	1.29	14.82
							HT	0.56	6.6	522.1	1.89	16.61
							75	0.68	7.0	580.3	1.57	14.95
D0008	UNL	BP	NA	8,694	5	06/05/79	CT	4.68	57.1	567.2	2.03	13.21
							CS	3.09	29.2	550.1	1.95	14.65
							HT	2.96	21.1	508.1	2.52	16.12
							75	3.38	32.7	542.2	2.12	14.69
D0010	UNL	BP	NA	8,733	0	06/12/79	CT	5.89	54.9	577.3	2.10	13.01
							CS	3.07	23.1	565.0	1.98	14.52
							HT	3.13	17.0	515.3	2.47	16.08
							75	3.67	28.0	554.0	2.14	14.56
D0013	UNL	BP	NA	8,760	6	06/14/79	CT	4.43	54.0	528.2	1.91	14.15
							CS	2.94	23.4	522.2	1.86	15.62
							HT	2.98	16.3	473.9	2.39	17.44
							75	3.26	27.7	510.3	2.01	15.73
D0034	LEAD	OR	NA	9,046	40	07/11/79	CT	3.78	40.7	589.1	1.98	13.34
							CS	1.96	13.6	604.0	1.50	14.05
							HT	2.73	15.2	532.7	2.33	15.70
							75	2.55	19.6	581.5	1.83	14.31
D0038	LEAD	OR	NA	9,307	15	07/24/79	CT	4.76	38.0	600.5	1.88	13.14
							CS	2.00	11.8	587.5	1.30	14.49
							HT	2.25	12.6	519.2	2.17	16.25
							75	2.63	17.4	571.5	1.66	14.62
D0072	LEAD	OR	NA	9,770	41	08/25/79	CT	4.51	32.5	595.1	1.64	13.44
							CS	2.36	12.2	577.5	1.17	14.69
							HT	2.86	19.3	507.3	2.08	16.24
							75	2.94	18.3	562.0	1.52	14.79

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	HC	CO	CO2	NOxc	FUEL ECON. MPG
								EMISSION RESULTS (gr/mi)				
D0093	LEAD	OR	NA	10,069	20	09/13/79	CT	4.73	42.4	579.2	1.95	13.43
							CS	2.76	16.3	563.1	1.39	14.86
							HT	2.90	16.4	510.1	2.28	16.28
							75	3.20	21.7	551.9	1.75	14.89
D0109	UNL	BP	NA	10,446	72	10/10/79	CT	5.23	60.5	541.6	2.12	13.59
							CS	3.04	33.2	533.0	1.87	14.92
							HT	3.04	21.4	492.3	2.49	16.58
							75	3.49	35.6	523.7	2.09	15.03
D0118	UNL	RE	NA	10,532	0	10/24/79	CT	2.09	24.6	641.6	1.67	12.92
							CS	0.19	1.7	607.4	1.19	14.53
							HT	0.49	6.8	540.3	2.04	16.06
							75	0.66	7.8	596.2	1.52	14.54
R0154	LEAD	OR	NA	11,750	91	01/16/80	CT	4.63	47.4	627.7	1.79	12.38
							CS	2.95	23.1	612.5	1.15	13.48
							HT	2.55	25.0	531.4	1.89	15.34
							75	3.18	28.6	593.5	1.48	13.68
R0157	LEAD	OR	NA	11,795	3	01/17/80	CT	4.70	38.9	566.6	1.56	13.81
							CS	2.60	10.1	538.9	1.09	15.77
							HT	2.64	14.6	476.8	1.70	17.46
							75	3.04	17.3	527.7	1.35	15.72
R0165	LEAD	OR	NA	11,831	6	01/22/80	CT	4.48	44.2	557.7	1.52	13.84
							CS	2.43	15.1	526.0	1.02	15.92
							HT	2.45	20.3	466.3	1.61	17.54
							75	2.85	22.5	516.3	1.28	15.83
R0173	UNL	BP	NA	11,877	22	01/25/80	CT	4.66	56.2	548.4	1.43	13.62
							CS	3.40	39.1	499.6	1.38	15.52
							HT	3.23	24.1	469.5	1.75	17.15
							75	3.61	38.5	501.4	1.49	15.48
R0178	UNL	OR	NA	11,909	0	01/28/80	CT	3.60	22.4	575.2	1.50	14.27
							CS	2.72	4.8	570.6	1.03	15.12
							HT	2.82	8.2	499.1	1.63	17.04
							75	2.93	9.3	552.1	1.29	15.41
R0184	UNL	OR	NA	12,118	17	01/30/80	CT	3.69	25.8	576.1	1.51	14.12
							CS	2.59	5.2	560.3	0.99	15.39
							HT	2.69	8.6	495.0	1.58	17.16
							75	2.84	10.4	545.8	1.26	15.54

AUTOMOTIVE TESTING LABORATORIES,INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
R0189	UNL	OR	NA	12,331	18	02/01/80	CT	3.78	28.4	574.9	1.49	14.05
							CS	2.51	4.7	561.7	0.99	15.38
							HT	2.57	7.3	497.4	1.59	17.17
							75	2.79	10.3	546.9	1.26	15.52
R0216	UNL	OR	NA	12,612	19	02/15/80	CT	3.69	26.6	582.4	1.53	13.96
							CS	2.66	4.6	566.0	0.94	15.26
							HT	2.80	8.2	502.4	1.63	16.93
							75	2.91	10.1	552.0	1.25	15.38
R0222	UNL	OR	NA	12,823	20	02/19/80	CT	3.72	25.2	581.1	1.47	14.03
							CS	2.66	4.2	560.4	0.96	15.42
							HT	2.79	8.2	497.0	1.58	17.11
							75	2.91	9.6	547.3	1.23	15.53
R0232	UNL	OR	NA	13,860	61	02/25/80	CT	3.86	29.9	575.9	1.53	13.97
							CS	2.64	4.4	564.8	1.01	15.30
							HT	2.80	9.4	504.2	1.63	16.81
							75	2.93	11.0	550.5	1.29	15.38
R0244	UNL	OR	NA	14,894	65	03/04/80	CT	3.84	29.9	585.8	1.53	13.76
							CS	2.28	5.3	553.2	0.83	15.60
							HT	2.34	7.6	490.7	1.49	17.40
							75	2.62	11.0	542.9	1.15	15.61
R0247	UNL	RE	NA	14,934	0	03/05/80	CT	1.44	16.9	601.2	1.14	14.04
							CS	0.26	1.3	568.2	0.80	15.54
							HT	0.51	4.3	508.3	1.24	17.18
							75	0.57	5.3	558.6	0.99	15.60

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0057	UNL	OR	NA	9,287	0	08/09/79	CT	1.85	11.6	695.5	2.30	12.33
							CS	0.45	0.3	637.5	1.64	13.88
							HT	0.73	2.4	592.3	2.43	14.84
							75	0.81	3.2	637.1	1.99	13.77
D0059	UNL	OR	NA	9,319	0	08/13/79	CT	2.48	11.7	668.8	2.29	12.77
							CS	0.40	0.0	618.3	1.71	14.32
							HT	0.78	4.5	554.2	2.34	15.74
							75	0.93	3.6	611.2	2.00	14.32
D0077	UNL	OR	NA	9,462	0	08/29/79	CT	2.18	11.0	709.2	2.57	12.10
							CS	0.55	0.2	630.7	1.75	14.03
							HT	0.92	6.9	571.4	2.57	15.17
							75	0.99	4.2	630.7	2.14	13.86
D0083	UNL	BP	NA	9,486	0	09/04/79	CT	4.16	33.1	594.6	2.51	13.45
							CS	3.25	9.7	557.5	2.10	15.22
							HT	3.54	9.4	512.6	2.51	16.48
							75	3.52	14.4	552.8	2.30	15.13
D0092	UNL	BP	NA	9,567	0	09/13/79	CT	4.11	25.2	610.1	2.98	13.39
							CS	3.12	8.8	537.2	2.38	15.82
							HT	3.41	9.7	514.9	2.93	16.40
							75	3.40	12.4	546.1	2.65	15.40
D0095	UNL	BP	NA	9,591	0	09/14/79	CT	3.93	22.2	612.4	3.12	13.45
							CS	3.11	9.6	569.1	2.44	14.94
							HT	3.78	9.0	514.1	2.91	16.43
							75	3.46	12.0	563.0	2.71	14.97
D0100	LEAD	OR	NA	9,814	39	09/25/79	CT	3.14	10.7	615.0	2.48	13.83
							CS	1.69	1.6	579.2	1.74	15.12
							HT	2.00	5.4	523.9	2.57	16.48
							75	2.07	4.5	571.5	2.12	15.17
D0119	LEAD	OR	NA	10,174	21	10/26/79	CT	2.94	14.3	639.5	2.67	13.22
							CS	1.77	2.2	601.5	1.94	14.54
							HT	2.12	6.6	533.8	2.88	16.11
							75	2.11	5.9	590.8	2.34	14.63
D0126	LEAD	OR	NA	10,407	20	11/12/79	CT	3.03	12.5	672.6	2.71	12.65
							CS	1.69	0.9	599.4	1.72	14.64
							HT	1.97	6.1	530.2	2.69	16.25
							75	2.04	4.7	595.6	2.19	14.56

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0136	LEAD	OR	NA	10,678	19	12/01/79	CT	3.90	25.3	633.1	2.44	12.95
							CS	1.83	3.2	588.3	1.67	14.82
							HT	2.91	9.5	525.3	2.46	16.15
							75	2.55	9.5	580.3	2.05	14.71
D0142	LEAD	OR	NA	10,922	18	12/10/79	CT	3.80	27.0	632.5	2.29	12.92
							CS	2.06	4.9	591.9	1.68	14.64
							HT	2.59	12.8	529.8	2.42	15.90
							75	2.56	11.6	583.3	2.01	14.56
D0148	LEAD	OR	NA	11,186	17	01/14/80	CT	4.27	30.7	591.3	1.75	13.59
							CS	2.41	4.3	582.9	1.19	14.86
							HT	2.65	7.7	510.4	1.90	16.72
							75	2.86	10.7	564.9	1.50	15.02
D0151	LEAD	OR	NA	11,223	0	01/15/80	CT	3.79	18.7	605.0	2.00	13.73
							CS	2.83	1.9	569.1	1.27	15.28
							HT	3.01	5.4	513.2	2.01	16.71
							75	3.08	6.3	561.3	1.62	15.28
D0163	LEAD	OR	NA	11,256	0	01/21/80	CT	4.11	29.3	597.2	1.95	13.52
							CS	2.55	3.6	573.4	1.36	15.12
							HT	2.65	8.2	503.4	2.03	16.91
							75	2.90	10.1	559.2	1.66	15.19
D0169	LEAD	OR	NA	11,593	37	01/24/80	CT	4.46	37.7	557.4	1.88	14.07
							CS	2.49	2.9	545.0	1.33	15.92
							HT	3.23	14.7	484.5	2.06	17.14
							75	3.10	13.3	531.1	1.64	15.80
D0174	LEAD	OR	NA	11,841	4	01/26/80	CT	4.29	32.9	556.9	1.97	14.27
							CS	2.54	3.2	542.2	1.41	15.99
							HT	3.05	16.7	478.7	1.97	17.24
							75	3.04	13.0	527.9	1.68	15.91
D0190	UNL	BP	NA	11,876	21	02/01/80	CT	4.56	29.7	566.2	2.40	14.15
							CS	3.52	10.1	548.1	1.74	15.43
							HT	3.69	8.3	497.6	2.24	16.99
							75	3.78	13.6	538.0	2.01	15.53
R0200	UNL	OR	NA	11,946	0	02/07/80	CT	3.68	19.5	593.4	1.96	13.96
							CS	3.04	1.4	569.2	1.23	15.27
							HT	3.29	5.5	512.8	1.95	16.69
							75	3.24	6.3	558.8	1.57	15.33

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

								EMISSION RESULTS (gr/mi)				FUEL ECON.
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	HC	CO	CO2	NOxc	MPG
R0212	UNL	OR	NA	12,133	19	02/14/80	CT	3.91	13.7	597.5	1.96	14.06
							CS	3.55	1.7	572.8	1.24	15.13
							HT	3.39	4.4	505.7	1.91	16.96
							75	3.58	4.9	559.6	1.57	15.34
R0219	UNL	OR	NA	12,347	19	02/18/80	CT	4.03	18.5	620.3	2.01	13.40
							CS	3.27	1.9	584.8	1.30	14.84
							HT	3.53	4.1	518.4	1.99	16.56
							75	3.50	5.9	574.0	1.63	14.93
R0224	UNL	OR	NA	12,621	20	02/20/80	CT	3.54	16.8	613.8	1.88	13.62
							CS	2.97	1.5	568.7	1.27	15.29
							HT	3.15	4.7	504.6	1.95	17.00
							75	3.14	5.5	560.5	1.58	15.33
R0230	UNL	OR	NA	12,902	41	02/23/80	CT	3.83	17.6	600.8	1.93	13.86
							CS	2.96	1.7	569.3	1.25	15.27
							HT	3.17	4.9	509.8	1.96	16.82
							75	3.19	5.9	559.5	1.59	15.33
R0243	UNL	OR	NA	13,930	69	02/29/80	CT	3.60	15.6	627.8	2.16	13.37
							CS	2.71	0.8	579.3	1.28	15.06
							HT	2.81	3.8	518.8	2.01	16.63
							75	2.92	4.7	572.8	1.66	15.06
R0246	UNL	OR	NA	14,940	71	03/05/80	CT	3.27	14.7	598.5	1.82	14.04
							CS	2.37	0.9	570.9	1.18	15.31
							HT	2.54	4.2	507.3	1.89	17.00
							75	2.60	4.6	559.3	1.50	15.44
R0252	UNL	RE	NA	14,990	0	03/07/80	CT	0.73	3.6	627.1	1.74	13.98
							CS	0.13	0.0	577.0	1.19	15.37
							HT	0.20	1.0	513.1	1.77	17.23
							75	0.27	1.0	569.9	1.46	15.51

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEA	MAKE	MODL	CID	CONV.
9403	197	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0004	UNL	OR	NA	6,818	7	05/22/79	CT	1.99	13.6	490.3	2.50	17.13
							CS	0.15	0.7	503.4	1.25	17.58
							HT	0.35	2.6	465.6	2.07	18.85
							75	0.59	3.9	490.4	1.73	17.81
D0006	UNL	OR	NA	6,857	2	05/23/79	CT	1.63	11.5	503.7	2.32	16.84
							CS	0.16	0.3	499.9	1.15	17.72
							HT	0.27	2.2	442.1	1.90	19.88
							75	0.49	3.1	484.9	1.59	18.06
D0007	UNL	OR	NA	6,886	0	05/25/79	CT	1.83	13.1	499.3	2.53	16.88
							CS	0.14	0.3	489.7	1.33	18.09
							HT	0.30	3.1	435.4	1.90	20.12
							75	0.53	3.7	476.8	1.73	18.32
D0009	UNL	BP	NA	6,950	0	06/08/79	CT	2.87	14.4	510.8	2.59	16.36
							CS	1.93	2.4	482.7	1.83	18.02
							HT	1.74	5.8	436.2	2.58	19.69
							75	2.07	5.8	475.8	2.19	18.06
D0011	UNL	BP	NA	7,014	6	06/13/79	CT	2.78	16.8	488.4	2.68	16.95
							CS	1.84	2.8	478.9	2.13	18.14
							HT	1.63	5.5	436.0	2.70	19.73
							75	1.97	6.4	469.2	2.40	18.28
D0014	UNL	BP	NA	7,069	0	06/23/79	CT	3.09	19.3	481.9	2.52	17.00
							CS	1.77	3.4	486.2	2.14	17.85
							HT	1.60	5.9	442.3	2.74	19.44
							75	2.00	7.3	473.4	2.38	18.07
D0049	LEAD	OR	NA	7,449	28	08/03/79	CT	3.00	15.5	481.0	2.46	17.24
							CS	1.04	1.0	482.7	1.20	18.20
							HT	1.17	5.1	447.3	2.13	19.34
							75	1.48	5.1	472.7	1.71	18.28
D0073	LEAD	OR	NA	7,767	27	08/25/79	CT	2.33	15.2	487.9	2.71	17.09
							CS	1.06	1.1	476.7	1.28	18.42
							HT	1.25	5.0	432.5	2.40	19.97
							75	1.38	5.1	467.0	1.88	18.52
D0088	LEAD	OR	NA	7,956	12	09/11/79	CT	2.66	16.9	484.5	2.40	17.08
							CS	1.19	1.7	479.4	1.11	18.27
							HT	1.17	3.9	440.3	2.13	19.72
							75	1.49	5.5	469.8	1.65	18.37

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0098	LEAD	OR	NA	8,161	13	09/19/79	CT	2.31	15.2	489.4	2.50	17.05
							CS	0.99	1.0	483.7	1.05	18.17
							HT	1.16	6.0	434.9	2.02	19.81
							75	1.31	5.3	471.6	1.61	18.34
D0103	LEAD	OR	NA	8,429	14	09/28/79	CT	2.48	14.7	492.2	2.41	16.97
							CS	1.09	1.1	477.3	1.00	18.39
							HT	1.12	4.2	442.0	2.04	19.63
							75	1.38	4.8	470.7	1.57	18.39
D0111	LEAD	OR	NA	8,618	12	10/11/79	CT	2.49	17.8	482.9	2.37	17.11
							CS	1.25	2.9	476.1	1.10	18.31
							HT	1.21	4.5	445.2	2.07	19.46
							75	1.50	6.4	469.1	1.63	18.34
D0121	LEAD	OR	NA	8,837	13	10/29/79	CT	2.71	19.2	476.0	2.77	17.24
							CS	1.60	6.5	474.2	1.51	18.13
							HT	1.43	5.2	438.3	2.52	19.68
							75	1.78	8.8	464.8	2.05	18.33
D0127	LEAD	OR	NA	9,017	13	11/12/79	CT	2.34	17.4	488.1	2.69	16.97
							CS	1.29	2.8	469.3	1.29	18.58
							HT	1.22	4.1	428.7	2.33	20.22
							75	1.48	6.2	462.1	1.86	18.63
D0135	LEAD	OR	NA	9,244	14	11/26/79	CT	2.35	19.7	475.0	2.89	17.29
							CS	1.21	2.1	471.1	1.35	18.56
							HT	1.13	3.6	426.1	2.51	20.38
							75	1.43	6.1	459.6	1.98	18.73
D0141	LEAD	OR	NA	9,430	12	12/10/79	CT	2.26	18.7	464.7	2.31	17.71
							CS	1.42	3.8	460.7	1.16	18.84
							HT	1.23	4.6	424.1	2.02	20.40
							75	1.54	7.1	451.5	1.63	18.98
D0155	LEAD	OR	NA	9,856	19	01/16/80	CT	3.74	32.2	471.1	2.24	16.63
							CS	1.54	2.6	458.7	1.26	18.98
							HT	1.40	4.9	412.9	2.13	20.88
							75	1.96	9.3	448.8	1.70	18.90
D0158	LEAD	OR	NA	9,889	0	01/17/80	CT	2.80	23.8	454.8	2.15	17.71
							CS	1.28	1.2	441.7	1.21	19.83
							HT	1.31	4.9	402.7	1.99	21.41
							75	1.60	6.8	433.7	1.61	19.74

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0160	LEAD	OR	NA	9,922	0	01/18/80	CT	2.84	25.8	464.6	2.20	17.26
							CS	1.28	1.0	447.4	1.13	19.59
							HT	1.31	4.0	406.9	2.01	21.27
							75	1.61	6.9	439.9	1.59	19.47
D0164	UNL	BP	NA	9,961	19	01/21/80	CT	2.38	26.3	474.6	2.21	16.95
							CS	1.88	4.8	448.4	1.94	19.21
							HT	1.65	5.0	410.0	2.38	20.98
							75	1.92	9.3	443.3	2.11	19.13
R0168	UNL	OR	NA	9,993	0	01/24/80	CT	2.29	25.1	455.0	1.91	17.69
							CS	1.57	4.1	455.0	1.05	19.03
							HT	1.43	5.4	408.8	1.83	21.05
							75	1.68	8.8	442.4	1.44	19.23
R0176	UNL	OR	NA	10,220	16	01/26/80	CT	2.12	21.4	460.6	1.98	17.72
							CS	1.32	2.4	457.3	0.96	19.08
							HT	1.19	3.6	417.2	1.75	20.80
							75	1.45	6.6	447.1	1.39	19.21
R0182	UNL	OR	NA	10,490	16	01/29/80	CT	2.22	24.1	456.5	1.94	17.70
							CS	1.31	3.5	457.9	1.07	18.98
							HT	1.19	4.1	413.8	1.80	20.93
							75	1.47	7.9	445.6	1.45	19.18
R0187	UNL	OR	NA	10,739	15	01/31/80	CT	2.26	24.2	459.1	1.97	17.60
							CS	1.23	3.0	454.5	0.98	19.17
							HT	1.12	5.0	415.6	1.72	20.79
							75	1.41	7.9	444.8	1.38	19.22
R0206	UNL	OR	NA	10,931	16	02/09/80	CT	2.22	24.9	463.9	1.82	17.40
							CS	1.19	3.5	462.4	0.97	18.82
							HT	1.09	4.0	425.3	1.72	20.40
							75	1.37	8.0	452.6	1.35	18.90
R0231	UNL	OR	NA	12,015	62	02/25/80	CT	2.19	26.1	475.4	1.93	16.96
							CS	1.28	2.9	471.4	0.90	18.49
							HT	1.16	4.9	423.6	1.69	20.40
							75	1.44	8.2	459.2	1.33	18.62
R0245	UNL	OR	NA	13,046	61	03/05/80	CT	2.44	26.9	460.4	1.82	17.38
							CS	1.28	5.0	458.9	0.90	18.85
							HT	1.13	5.2	418.5	1.65	20.62
							75	1.48	9.6	448.2	1.29	18.97

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
R0251	UNL	RE	NA	13,114	0	03/07/80	CT	1.88	29.6	473.3	1.64	16.88
							CS	0.52	1.6	458.4	0.76	19.19
							HT	0.47	3.2	420.4	1.33	20.79
							75	0.79	7.8	451.1	1.10	19.05

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0018	UNL	OR	NA	7,283	0	06/27/79	CT	2.08	30.1	527.8	1.87	15.26
							CS	0.29	2.3	545.5	0.73	16.13
							HT	0.62	10.8	479.7	1.33	17.80
							75	0.75	10.4	523.9	1.13	16.36
D0020	UNL	OR	NA	7,315	5	06/28/79	CT	3.17	40.4	523.6	1.69	14.86
							CS	0.33	3.6	555.0	4.46	15.80
							HT	0.60	12.9	480.7	1.26	17.65
							75	0.99	13.7	528.3	3.02	16.05
D0022	UNL	OR	NA	7,349	2	06/29/79	CT	2.56	37.4	521.9	1.63	15.07
							CS	0.33	3.6	540.1	0.61	16.23
							HT	0.60	13.7	479.1	1.24	17.66
							75	0.86	13.3	519.7	0.99	16.33
D0027	UNL	BP	NA	7,380	0	07/07/79	CT	2.93	30.8	504.8	1.84	15.78
							CS	2.43	4.8	514.6	1.35	16.75
							HT	2.18	12.9	466.9	1.80	17.96
							75	2.46	12.4	499.6	1.57	16.85
D0031	UNL	BP	NA	7,437	6	07/10/79	CT	2.88	33.1	519.1	1.91	15.29
							CS	2.70	5.8	511.1	1.15	16.78
							HT	2.29	14.5	460.3	1.69	18.10
							75	2.62	13.8	498.9	1.46	16.78
D0033	UNL	BP	NA	7,492	0	07/11/79	CT	2.90	32.5	511.2	2.00	15.53
							CS	2.55	4.8	529.6	1.37	16.28
							HT	2.25	14.5	476.6	1.81	17.52
							75	2.54	13.2	511.4	1.62	16.43
D0054	LEAD	OR	NA	7,955	40	08/08/79	CT	2.92	39.3	497.7	1.75	15.61
							CS	1.46	4.0	516.1	0.73	16.84
							HT	1.54	14.6	469.1	1.41	17.86
							75	1.78	14.1	499.5	1.12	16.83
D0082	LEAD	OR	NA	8,266	24	08/31/79	CT	2.52	29.1	503.4	1.88	15.93
							CS	1.38	2.2	503.4	0.73	17.36
							HT	1.50	12.0	457.6	1.44	18.44
							75	1.65	10.4	490.9	1.16	17.32
D0094	LEAD	OR	NA	8,358	12	09/13/79	CT	3.27	39.9	495.4	1.72	15.61
							CS	1.63	3.5	518.5	0.72	16.77
							HT	1.61	11.4	466.4	1.42	18.13
							75	1.96	13.2	499.6	1.12	16.86

AUTOMOTIVE TESTING LABORATORIES, INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0101	LEAD	OR	NA	8,528	10	09/25/79	CT	2.50	26.1	505.2	1.89	16.02
							CS	1.61	2.4	503.7	0.71	17.31
							HT	1.59	9.6	453.2	1.37	18.75
							75	1.79	9.3	490.2	1.13	17.39
D0107	LEAD	OR	NA	8,727	15	10/05/79	CT	2.52	31.1	504.4	1.98	15.81
							CS	1.60	3.2	509.5	0.79	17.08
							HT	1.58	10.7	456.0	1.48	18.57
							75	1.79	11.0	493.9	1.22	17.17
D0113	LEAD	OR	NA	8,897	11	10/12/79	CT	2.82	32.3	501.6	1.74	15.81
							CS	1.61	2.9	511.6	0.70	17.03
							HT	1.63	11.3	452.2	1.40	18.68
							75	1.87	11.3	493.3	1.10	17.17
D0122	LEAD	OR	NA	9,213	16	10/30/79	CT	3.34	40.5	488.8	1.67	15.76
							CS	1.73	5.0	510.3	0.70	16.95
							HT	1.72	11.3	454.9	1.39	18.57
							75	2.06	14.0	490.8	1.09	17.09
D0124	LEAD	OR	NA	9,363	14	11/07/79	CT	2.70	36.5	503.3	1.75	15.59
							CS	1.47	2.0	512.0	0.72	17.08
							HT	1.50	9.5	458.5	1.42	18.56
							75	1.73	11.1	495.6	1.12	17.12
D0140	LEAD	OR	NA	9,627	14	12/07/79	CT	3.12	42.7	475.1	1.57	16.08
							CS	2.00	6.8	499.0	0.71	17.20
							HT	1.79	14.6	453.9	1.44	18.39
							75	2.18	16.3	481.7	1.08	17.26
D0146	LEAD	OR	NA	9,842	12	12/15/79	CT	2.55	24.8	489.3	1.92	16.55
							CS	1.52	1.1	491.4	0.71	17.82
							HT	1.51	7.6	448.5	1.49	19.08
							75	1.73	7.8	479.3	1.17	17.86
D0156	LEAD	OR	NA	10,098	9	01/16/80	CT	3.34	54.5	475.4	1.39	15.53
							CS	2.26	8.4	484.3	0.69	17.59
							HT	1.86	13.0	429.5	1.35	19.47
							75	2.37	19.1	467.5	1.01	17.57
D0159	LEAD	OR	NA	10,134	0	01/17/80	CT	3.05	47.1	474.9	1.49	15.89
							CS	1.83	4.2	477.8	0.62	18.11
							HT	1.73	12.5	427.8	1.25	19.59
							75	2.06	15.3	463.6	0.97	17.96

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0172	UNL	BP	NA	10,165	18	01/25/80	CT	3.41	53.7	454.7	1.32	16.14
							CS	2.44	5.6	468.1	1.06	18.31
							HT	2.22	14.8	421.9	1.41	19.63
							75	2.58	18.0	452.8	1.21	18.14
R0177	UNL	OR	NA	10,199	0	01/26/80	CT	2.93	39.4	463.8	1.31	16.59
							CS	1.89	3.7	478.9	0.55	18.09
							HT	1.86	12.3	429.6	1.12	19.51
							75	2.09	13.4	462.3	0.86	18.11
R0180	UNL	OR	NA	10,385	16	01/28/80	CT	2.93	43.6	470.6	1.30	16.19
							CS	1.60	3.2	491.2	0.55	17.70
							HT	1.57	10.6	434.6	1.14	19.45
							75	1.86	13.5	471.5	0.87	17.80
R0186	UNL	OR	NA	10,633	16	01/31/80	CT	3.01	45.7	460.9	1.26	16.37
							CS	1.68	5.4	489.6	0.52	17.63
							HT	1.50	11.1	436.1	1.17	19.36
							75	1.90	15.3	469.1	0.85	17.78
R0205	UNL	OR	NA	10,864	15	02/09/80	CT	3.05	46.8	464.7	1.23	16.20
							CS	1.52	4.2	488.8	0.54	17.74
							HT	1.55	12.9	434.7	1.12	19.30
							75	1.85	15.4	469.1	0.84	17.78
R0211	UNL	OR	NA	11,082	16	02/14/80	CT	2.76	40.8	464.1	1.31	16.53
							CS	1.51	3.5	488.5	0.53	17.79
							HT	1.51	11.2	430.9	1.14	19.58
							75	1.77	1[illegible].3	467.7	0.86	17.96
R0233	UNL	OR	NA	12,119	67	02/25/80	CT	3.49	59.2	461.9	1.24	15.68
							CS	1.66	5.1	486.7	0.56	17.75
							HT	1.53	12.2	434.4	1.15	19.36
							75	2.00	18.2	467.3	0.86	17.67
R0248	UNL	OR	NA	13,149	61	03/06/80	CT	4.95	60.7	485.4	1.43	14.88
							CS	1.24	2.8	488.3	0.68	17.87
							HT	1.24	10.3	425.0	1.24	19.94
							75	2.00	16.8	470.4	0.99	17.64
R0253	UNL	RE	NA	13,179	0	03/07/80	CT	2.12	42.6	468.9	1.04	16.36
							CS	0.43	1.1	481.0	0.55	18.33
							HT	0.62	8.7	429.5	0.82	19.94
							75	0.83	11.7	464.5	0.72	18.28

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0021	UNL	OR	OR	4,179	5	06/28/79	CT	0.70	11.2	706.3	1.73	12.22
							CS	0.17	0.2	660.2	0.68	13.43
							HT	0.23	0.6	596.6	0.82	14.83
							75	0.30	2.6	652.3	0.94	13.50
D0023	UNL	OR	OR	4,210	0	06/29/79	CT	0.66	8.0	673.4	2.31	12.90
							CS	0.18	0.1	664.2	0.72	13.35
							HT	0.33	0.7	607.0	0.88	14.57
							75	0.32	1.9	650.5	1.09	13.56
D0026	UNL	OR	OR	4,282	0	07/05/79	CT	0.73	7.5	692.5	2.03	12.56
							CS	0.16	0.0	667.2	0.72	13.29
							HT	0.19	1.0	633.5	0.96	13.96
							75	0.28	1.8	663.2	1.05	13.31
D0028	UNL	BP	OR	4,319	8	07/07/79	CT	4.01	50.4	611.5	2.74	12.62
							CS	2.66	15.3	629.8	1.51	13.40
							HT	2.23	19.1	554.6	2.01	15.00
							75	2.82	23.6	605.5	1.90	13.62
D0030	UNL	BP	OR	4,345	0	07/09/79	CT	3.05	37.6	607.9	2.95	13.12
							CS	2.57	15.0	618.5	1.41	13.65
							HT	2.23	19.9	548.9	1.91	15.12
							75	2.57	21.0	597.3	1.87	13.90
D0032	UNL	BP	OR	4,373	0	07/10/79	CT	3.80	52.3	616.8	2.97	12.48
							CS	2.63	14.6	627.8	1.55	13.47
							HT	2.18	14.5	555.9	2.24	15.16
							75	2.75	22.3	605.9	2.03	13.66
D0065	LEAD	OR	OR	4,731	58	08/15/79	CT	1.49	13.6	660.0	2.15	12.94
							CS	0.82	1.3	638.9	0.97	13.79
							HT	1.17	4.7	563.5	1.30	15.44
							75	1.06	4.8	622.7	1.30	14.01
D0081	LEAD	OR	OR	4,902	14	08/31/79	CT	6.25	25.9	691.8	2.36	11.80
							CS	1.05	3.0	635.4	1.00	13.79
							HT	1.68	14.4	577.3	1.32	14.66
							75	2.29	10.8	631.1	1.37	13.54
D0090	LEAD	OR	OR	5,034	13	09/12/79	CT	2.94	25.0	641.0	2.26	12.87
							CS	1.24	3.5	622.0	1.18	14.06
							HT	1.32	8.8	552.7	1.55	15.55
							75	1.61	9.3	607.0	1.51	14.16

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0104	LEAD	OR	OR	5,250	16	09/28/79	CT	2.59	19.1	666.8	2.54	12.59
							CS	0.98	1.4	624.9	1.45	14.09
							HT	1.50	5.1	552.3	1.80	15.71
							75	1.45	6.0	613.7	1.77	14.14
D0108	LEAD	OR	OR	5,466	15	10/05/79	CT	2.95	16.7	641.3	2.70	13.11
							CS	1.04	0.4	627.8	1.37	14.05
							HT	1.43	2.9	553.0	1.77	15.79
							75	1.54	4.4	610.2	1.76	14.27
D0110	LEAD	OR	OR	5,719	17	10/11/79	CT	2.64	19.9	650.3	2.59	12.86
							CS	1.35	2.5	617.6	1.56	14.18
							HT	1.30	4.0	560.4	1.98	15.55
							75	1.60	6.5	608.7	1.89	14.22
D0123	LEAD	OR	OR	5,954	13	10/30/79	CT	2.56	18.3	647.2	2.55	12.97
							CS	1.57	0.9	627.9	1.48	13.99
							HT	1.70	1.9	562.2	1.92	15.56
							75	1.81	4.7	614.0	1.82	14.15
D0133	LEAD	OR	OR	6,050	13	11/17/79	CT	4.41	32.3	656.5	2.65	12.31
							CS	1.87	2.8	625.9	1.72	13.95
							HT	2.52	5.6	567.8	2.23	15.18
							75	2.57	9.7	616.3	2.05	13.88
D0139	LEAD	OR	OR	6,242	28	12/06/79	CT	2.86	30.7	617.1	2.39	13.16
							CS	1.65	6.2	604.2	1.57	14.34
							HT	1.68	10.6	540.0	1.95	15.79
							75	1.91	12.4	589.3	1.84	14.43
D0144	LEAD	OR	OR	6,637	16	12/15/79	CT	3.21	20.3	653.0	2.56	12.77
							CS	1.92	0.8	620.7	1.74	14.13
							HT	1.52	2.2	563.3	2.23	15.53
							75	2.07	5.2	611.7	2.04	14.17
D0161	LEAD	OR	OR	6,875	7	01/18/80	CT	3.26	40.1	624.1	1.89	12.73
							CS	1.94	5.9	599.4	1.12	14.44
							HT	1.73	10.7	532.8	1.41	15.99
							75	2.15	14.2	586.3	1.36	14.42
D0166	LEAD	OR	OR	6,944	4	01/22/80	CT	4.45	48.6	599.0	2.03	12.87
							CS	1.89	8.0	595.4	1.22	14.46
							HT	1.84	14.1	524.6	1.56	16.06
							75	2.40	18.0	576.8	1.48	14.48

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON. MPG
								HC	CO	CO2	NOxc	
D0196	LEAD	OR	OR	7,057	17	02/05/80	CT	2.78	19.8	577.1	2.56	14.38
							CS	1.99	5.5	572.1	1.33	15.12
							HT	1.63	9.1	514.8	1.76	16.61
							75	2.05	9.4	557.5	1.70	15.33
D0228	LEAD	OR	OR	7,152	5	02/23/80	CT	2.82	26.2	560.3	2.84	14.54
							CS	2.10	7.8	570.6	1.41	15.05
							HT	1.76	13.6	502.8	1.74	16.75
							75	2.16	13.2	550.0	1.79	15.37
R0235	LEAD	BP	OR	7,184	10	02/26/80	CT	4.57	70.9	560.7	2.76	12.93
							CS	2.73	26.6	551.0	1.48	14.76
							HT	2.30	29.2	485.2	1.95	16.48
							75	2.99	36.4	535.0	1.87	14.75
R0237	LEAD	BP	OR	7,213	0	02/27/80	CT	4.05	68.4	541.1	2.61	13.42
							CS	2.65	22.1	544.8	1.51	15.09
							HT	2.22	26.9	480.9	2.00	16.74
							75	2.82	33.0	526.6	1.87	15.11
R0240	UNL	BP	OR	7,241	18	02/28/80	CT	3.60	60.5	537.3	2.28	13.79
							CS	2.82	30.7	546.0	1.32	14.71
							HT	2.26	24.2	494.2	1.85	16.45
							75	2.83	35.1	530.1	1.66	14.94
R0241	UNL	BP	OR	7,269	0	02/29/80	CT	3.96	58.9	556.8	2.69	13.41
							CS	2.72	27.2	553.1	1.43	14.68
							HT	2.17	21.4	497.7	1.96	16.49
							75	2.82	32.2	538.8	1.83	14.84
R0249	UNL	BP	NW	7,302	0	03/06/80	CT	3.13	44.4	560.6	2.90	13.86
							CS	2.51	17.3	564.4	1.67	14.80
							HT	2.10	18.3	492.6	2.23	16.81
							75	2.53	23.1	544.0	2.07	15.08
R0254	UNL	BP	NW	7,329	0	03/10/80	CT	3.44	53.5	550.7	2.69	13.75
							CS	2.47	16.7	550.5	1.65	15.18
							HT	2.17	13.4	489.8	2.23	17.14
							75	2.59	23.4	534.0	2.02	15.33
R0260	UNL	OR	NW	7,358	0	03/11/80	CT	2.48	23.3	596.5	2.48	13.85
							CS	2.06	2.4	578.8	1.51	15.07
							HT	1.67	4.6	516.6	1.87	16.78
							75	2.04	7.3	565.5	1.81	15.21

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
R0261	UNL	OR	OR	7,390	16	03/12/80	CT	2.77	28.0	604.6	2.48	13.50
							CS	2.17	6.6	572.7	1.46	15.05
							HT	1.71	6.1	517.4	1.88	16.67
							75	2.17	10.8	564.2	1.78	15.09
R0264	UNL	OR	OR	7,629	13	03/14/80	CT	2.55	23.1	604.9	2.38	13.67
							CS	1.85	4.0	588.4	1.38	14.78
							HT	1.45	5.3	525.1	1.67	16.50
							75	1.88	8.3	574.5	1.66	14.95
R0266	UNL	OR	NW	7,666	0	03/17/80	CT	2.62	23.7	605.4	2.39	13.64
							CS	1.77	2.0	578.7	1.50	15.11
							HT	1.41	2.3	520.4	1.70	16.79
							75	1.85	6.6	568.3	1.73	15.19
R0269	UNL	OR	OR	7,910	20	03/19/80	CT	2.41	21.0	641.3	2.55	13.01
							CS	1.51	1.7	603.6	1.16	14.52
							HT	1.28	3.4	539.0	1.53	16.18
							75	1.63	6.2	593.7	1.55	14.58
R0272	UNL	OR	NW	7,941	0	03/21/80	CT	3.08	31.3	628.8	2.45	12.90
							CS	1.62	0.9	582.5	1.29	15.07
							HT	1.41	1.6	527.3	1.79	16.61
							75	1.86	7.4	577.0	1.66	14.93
R0280	UNL	OR	OR	8,144	15	03/28/80	CT	2.98	25.4	613.2	2.32	13.39
							CS	1.75	1.1	589.9	1.14	14.86
							HT	1.52	2.3	526.0	1.56	16.61
							75	1.94	6.4	577.3	1.50	14.95
R0282	UNL	OR	NW	8,174	0	03/31/80	CT	2.43	16.7	622.6	2.63	13.52
							CS	1.67	1.2	586.2	1.16	14.96
							HT	1.33	3.8	521.9	1.64	16.68
							75	1.73	5.1	576.2	1.59	15.05
R0285	UNL	OR	OR	8,473	23	04/03/80	CT	2.60	21.6	620.5	2.16	13.39
							CS	1.87	1.3	583.3	0.93	15.01
							HT	1.52	2.3	519.8	1.42	16.80
							75	1.92	5.8	573.6	1.32	15.07
R0286	UNL	OR	NW	8,504	9	04/07/80	CT	2.43	20.0	624.9	2.27	13.37
							CS	1.63	1.2	588.4	1.06	14.91
							HT	1.41	3.0	527.2	1.45	16.54
							75	1.74	5.6	579.2	1.42	14.96

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
R0293	UNL	OR	NW	9,369	52	04/30/80	CT	2.36	21.6	633.0	2.07	13.16
							CS	1.18	0.7	597.0	0.91	14.75
							HT	1.04	2.9	533.2	1.35	16.41
							75	1.39	5.6	587.0	1.27	14.79
R0297	UNL	OR	OR	9,543	4	05/13/80	CT	1.85	26.6	611.3	1.75	13.47
							CS	0.70	0.4	598.0	0.80	14.77
							HT	0.64	1.6	528.3	1.16	16.66
							75	0.92	6.1	581.7	1.09	14.94
R0299	UNL	BP	OR	9,600	0	05/19/80	CT	3.30	53.5	547.1	2.53	13.83
							CS	2.51	25.5	557.5	1.19	14.66
							HT	1.93	14.9	492.6	1.99	17.00
							75	2.51	28.4	537.6	1.68	15.04
R0300	UNL	BP	NW	9,634	0	05/20/80	CT	3.49	57.6	541.2	2.42	13.81
							CS	2.39	22.1	552.3	1.15	14.93
							HT	1.94	21.5	491.2	1.80	16.71
							75	2.50	29.2	533.3	1.59	15.11
R0303	UNL	RE	OR	9,735	16	05/28/80	CT	1.18	19.0	619.8	1.12	13.58
							CS	0.16	0.0	600.0	0.37	14.78
							HT	0.16	0.7	530.5	0.47	16.68
							75	0.37	4.1	585.1	0.55	14.97
R0306	UNL	RE	NW	9,846	0	06/02/80	CT	1.31	16.2	614.7	1.18	13.77
							CS	0.22	0.7	595.9	0.48	14.85
							HT	0.22	1.3	526.1	0.55	16.78
							75	0.45	4.1	580.7	0.64	15.08

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0039	UNL	OR	OR	5,795	0	07/25/79	CT	0.69	9.6	562.7	1.90	15.30
							CS	0.03	0.1	518.4	0.18	17.11
							HT	0.08	0.5	484.4	1.04	18.28
							75	0.18	2.2	518.2	0.77	17.00
D0044	UNL	OR	OR	5,831	0	07/27/79	CT	0.89	9.2	527.9	4.11	16.28
							CS	0.10	0.0	480.2	2.77	18.47
							HT	0.11	0.1	456.1	3.77	19.44
							75	0.26	1.9	483.5	3.32	18.21
D0055	UNL	OR	OR	5,907	0	08/09/79	CT	0.68	11.1	544.2	1.78	15.74
							CS	0.03	0.1	506.6	0.11	17.51
							HT	0.09	0.6	471.0	1.16	18.80
							75	0.18	2.5	504.6	0.74	17.43
D0067	UNL	BP	OR	6,002	5	08/16/79	CT	1.80	22.2	504.4	6.38	16.29
							CS	1.16	14.8	482.1	3.49	17.43
							HT	1.24	12.8	443.6	5.87	18.98
							75	1.32	15.8	476.2	4.73	17.57
D0078	UNL	BP	OR	6,075	0	08/30/79	CT	1.86	22.1	530.2	6.94	15.55
							CS	1.23	14.2	479.6	3.52	17.55
							HT	1.25	13.6	445.1	5.96	18.87
							75	1.36	15.7	480.6	4.89	17.42
D0080	UNL	BP	OR	6,101	0	08/31/79	CT	1.81	22.6	506.2	6.60	16.21
							CS	1.23	14.8	472.4	3.66	17.77
							HT	1.28	13.1	442.9	6.14	18.99
							75	1.36	15.9	471.3	4.94	17.73
D0091	LEAD	OR	OR	6,371	26	09/12/79	CT	0.70	8.9	531.5	1.67	16.20
							CS	0.20	1.7	496.4	0.09	17.76
							HT	0.25	1.2	451.6	0.92	19.54
							75	0.32	3.1	491.4	0.64	17.85
D0096	LEAD	OR	OR	6,597	13	09/17/79	CT	1.06	10.8	546.0	1.85	15.67
							CS	0.27	2.6	502.3	0.19	17.50
							HT	0.34	1.9	459.0	1.03	19.17
							75	0.45	4.1	499.5	0.76	17.49
D0099	LEAD	OR	OR	6,853	12	09/24/79	CT	1.02	11.2	524.1	2.26	16.29
							CS	0.36	2.7	488.8	0.26	17.96
							HT	0.51	2.9	455.3	1.42	19.23
							75	0.54	4.5	486.9	0.99	17.90

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0106	LEAD	OR	OR	7,036	13	10/04/79	CT	1.42	14.8	532.7	2.43	15.84
							CS	0.62	3.2	488.3	0.43	17.92
							HT	0.69	3.1	453.1	1.62	19.29
							75	0.80	5.5	487.8	1.17	17.78
D0120	LEAD	OR	OR	7,275	14	10/27/79	CT	1.66	12.1	537.7	3.71	15.79
							CS	0.96	2.4	493.2	0.89	17.75
							HT	0.97	2.9	457.6	2.71	19.07
							75	1.11	4.5	492.6	1.97	17.63
D0134	LEAD	OR	OR	7,516	12	11/21/79	CT	1.51	14.4	548.6	2.65	15.41
							CS	0.83	2.6	524.2	0.79	16.72
							HT	0.88	3.7	486.4	2.29	17.93
							75	0.99	5.3	518.9	1.58	16.74
D0138	LEAD	OR	OR	7,641	13	12/04/79	CT	1.58	12.6	500.7	3.00	16.89
							CS	0.98	2.0	487.1	0.83	17.99
							HT	1.01	3.4	435.2	2.38	20.00
							75	1.11	4.5	475.7	1.70	18.25
D0143	LEAD	OR	OR	7,934	17	12/11/79	CT	1.59	13.2	503.1	3.29	16.78
							CS	1.00	2.5	482.6	1.04	18.12
							HT	1.03	4.2	444.2	2.88	19.55
							75	1.13	5.2	476.4	2.00	18.18
D0150	LEAD	OR	OR	8,144	3	01/14/80	CT	1.95	14.2	502.8	3.76	16.71
							CS	1.26	4.5	471.1	1.31	18.41
							HT	1.34	5.6	430.0	3.26	20.03
							75	1.42	6.8	466.4	2.35	18.43
D0153	LEAD	OR	OR	8,174	4	01/15/80	CT	1.78	14.4	480.0	3.81	17.47
							CS	1.13	4.1	473.2	1.64	18.37
							HT	1.23	4.8	429.4	3.40	20.13
							75	1.29	6.4	462.6	2.57	18.62
R0175	LEAD	BP	OR	8,220	4	01/26/80	CT	2.02	26.3	452.8	5.21	17.73
							CS	1.38	17.2	432.6	2.75	19.13
							HT	1.47	17.6	400.1	4.94	20.52
							75	1.54	19.2	427.9	3.85	19.17
R0179	LEAD	BP	OR	8,250	0	01/28/80	CT	2.10	29.8	457.7	5.07	17.36
							CS	1.31	18.1	442.9	2.67	18.66
							HT	1.44	18.7	406.2	4.83	20.16
							75	1.51	20.7	435.9	3.75	18.76

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
R0183	UNL	BP	OR	8,280	14	01/29/80	CT	2.17	30.8	456.9	4.97	17.33
							CS	1.33	16.5	440.7	2.68	18.85
							HT	1.50	18.6	404.3	4.69	20.25
							75	1.55	20.0	434.1	3.70	18.86
R0185	UNL	BP	OR	8,309	0	01/30/80	CT	2.11	30.5	456.8	5.02	17.35
							CS	1.34	17.0	439.4	2.66	18.87
							HT	1.41	18.6	403.8	4.75	20.29
							75	1.52	20.2	433.3	3.71	18.89
R0193	UNL	BP	NW	8,339	0	02/04/80	CT	2.02	25.0	464.6	5.27	17.39
							CS	1.30	15.4	437.0	2.74	19.08
							HT	1.40	15.5	409.8	4.99	20.24
							75	1.48	17.4	435.3	3.87	19.00
R0198	UNL	BP	NW	8,380	0	02/06/80	CT	2.18	31.7	459.8	4.95	17.18
							CS	1.37	18.9	435.0	2.64	18.92
							HT	1.69	23.5	422.8	4.67	19.08
							75	1.63	22.8	436.8	3.67	18.58
R0202	UNL	OR	NW	8,406	0	02/08/80	CT	1.78	19.7	482.7	3.80	17.09
							CS	1.24	9.1	466.1	1.74	18.32
							HT	1.25	9.4	434.9	3.57	19.56
							75	1.36	11.4	461.0	2.66	18.37
R0207	UNL	OR	OR	8,445	0	02/09/80	CT	1.90	17.8	476.4	3.69	17.39
							CS	1.11	2.8	450.3	1.51	19.37
							HT	1.15	4.9	426.1	3.17	20.28
							75	1.28	6.5	449.1	2.41	19.16
R0213	UNL	OR	OR	8,730	30	02/14/80	CT	1.84	17.2	484.7	3.51	17.15
							CS	1.08	1.4	474.6	1.36	18.48
							HT	1.13	3.9	435.0	2.84	19.96
							75	1.25	5.4	465.9	2.20	18.56
R0215	UNL	OR	NW	8,760	0	02/15/80	CT	1.89	19.6	475.5	3.67	17.33
							CS	1.12	5.7	461.4	1.58	18.73
							HT	1.25	7.0	426.5	3.24	20.10
							75	1.31	9.0	454.8	2.47	18.76
R0218	UNL	OR	OR	8,927	15	02/18/80	CT	2.03	19.5	490.8	3.95	16.81
							CS	1.19	3.2	464.1	1.70	18.77
							HT	1.22	5.5	432.5	3.30	19.94
							75	1.37	7.2	461.0	2.60	18.62

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
R0221	UNL	OR	NW	8,958	0	02/19/80	CT	1.90	20.2	482.2	4.09	17.07
							CS	1.20	7.0	455.2	1.89	18.88
							HT	1.25	7.2	424.2	3.51	20.19
							75	1.36	9.8	452.3	2.78	18.80
R0225	UNL	OR	OR	9,164	30	02/21/80	CT	1.90	17.6	493.5	3.77	16.83
							CS	1.12	2.5	464.3	1.57	18.82
							HT	1.16	4.8	429.2	3.10	20.15
							75	1.29	6.2	460.7	2.44	18.70
R0227	UNL	OR	NW	9,212	0	02/23/80	CT	1.89	17.5	492.6	4.23	16.87
							CS	1.18	5.7	466.2	1.91	18.53
							HT	1.20	6.9	427.3	3.47	20.08
							75	1.33	8.5	461.0	2.82	18.55
R0236	UNL	OR	OR	9,503	20	02/26/80	CT	2.17	21.2	509.1	4.33	16.16
							CS	1.16	3.7	468.7	1.70	18.56
							HT	1.22	6.0	430.0	3.36	20.02
							75	1.38	7.9	466.5	2.70	18.36
R0238	UNL	OR	NW	9,532	0	02/27/80	CT	1.93	17.6	493.4	4.12	16.84
							CS	1.13	3.6	461.1	1.50	18.87
							HT	1.19	5.8	429.1	3.02	20.08
							75	1.31	7.1	459.0	2.45	18.71
R0255	UNL	OR	OR	10,562	65	03/10/80	CT	1.94	19.5	520.9	4.03	15.91
							CS	1.08	2.7	468.4	1.49	18.64
							HT	1.11	5.0	430.4	2.95	20.09
							75	1.26	6.8	468.9	2.41	18.36
R0259	UNL	OR	NW	10,610	5	03/11/80	CT	1.82	20.7	504.5	3.99	16.35
							CS	1.09	6.5	458.1	1.74	18.81
							HT	1.11	6.9	431.0	3.12	19.93
							75	1.24	9.5	460.3	2.58	18.52
R0265	UNL	OR	OR	11,642	56	03/17/80	CT	1.92	16.6	517.7	4.05	16.14
							CS	1.04	1.1	468.2	1.48	18.76
							HT	1.02	2.8	432.0	2.99	20.19
							75	1.22	4.7	468.5	2.42	18.50
R0268	UNL	OR	NW	11,672	0	03/18/80	CT	1.72	17.2	493.0	3.96	16.89
							CS	1.04	4.3	463.7	1.55	18.73
							HT	1.05	5.9	430.9	3.09	20.01
							75	1.18	7.4	460.8	2.47	18.64

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
R0271	UNL	BP	OR	11,701	0	03/20/80	CT	2.07	30.2	467.1	4.94	17.03
							CS	1.24	16.8	436.1	2.54	19.03
							HT	1.39	17.5	405.1	4.68	20.31
							75	1.45	19.7	434.0	3.62	18.90
R0273	UNL	BP	NW	11,728	0	03/21/80	CT	2.07	31.4	481.4	5.09	16.52
							CS	1.27	18.2	442.6	2.49	18.68
							HT	1.34	18.2	407.5	4.42	20.15
							75	1.45	20.9	441.0	3.55	18.55
R0275	UNL	RE	OR	11,753	0	03/25/80	CT	0.77	13.4	516.8	0.08	16.43
							CS	0.08	0.8	477.6	0.02	18.53
							HT	0.20	2.2	440.7	0.01	19.96
							75	0.25	3.8	475.6	0.03	18.40
R0279	UNL	RE	NW	11,847	14	03/27/80	CT	0.85	13.2	514.7	0.17	16.49
							CS	0.36	6.2	468.7	0.00	18.51
							HT	0.44	5.8	436.2	0.02	19.87
							75	0.48	7.5	469.3	0.04	18.39

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0043	UNL	OR	OR	5,182	0	07/27/79	CT	1.05	18.4	498.4	0.92	16.73
							CS	0.06	2.3	460.1	0.48	19.13
							HT	0.14	4.6	421.6	0.83	20.68
							75	0.29	6.3	457.5	0.66	18.96
D0056	UNL	OR	OR	5,271	0	08/09/79	CT	1.04	17.3	486.3	0.84	17.17
							CS	0.06	1.8	439.0	0.54	20.08
							HT	0.14	2.7	408.5	0.83	21.48
							75	0.28	5.2	440.4	0.68	19.74
D0060	UNL	OR	OR	5,299	0	08/13/79	CT	2.21	26.8	472.2	0.93	17.03
							CS	0.06	2.7	430.6	0.67	20.40
							HT	0.25	4.8	397.2	0.92	21.89
							75	0.55	8.2	430.1	0.79	19.96
D0064	UNL	BP	OR	5,330	0	08/14/79	CT	2.37	30.1	457.5	2.58	17.32
							CS	1.47	11.7	408.9	3.30	20.55
							HT	1.21	11.7	383.7	3.17	21.87
							75	1.58	15.5	412.0	3.12	20.11
D0075	UNL	BP	OR	5,384	0	08/27/79	CT	2.15	31.7	446.3	2.42	17.65
							CS	1.56	12.1	392.9	3.06	21.29
							HT	1.48	12.9	375.8	3.00	22.15
							75	1.66	16.4	399.2	2.91	20.63
D0076	UNL	BP	OR	5,408	0	08/29/79	CT	1.93	31.1	473.1	1.84	16.81
							CS	1.31	13.6	434.2	1.61	19.30
							HT	1.20	13.3	404.9	1.86	20.66
							75	1.40	17.1	434.2	1.73	19.06
D0097	LEAD	OR	OR	5,646	14	09/18/79	CT	1.45	20.5	467.4	1.11	17.60
							CS	0.15	3.3	430.8	0.72	20.34
							HT	0.25	5.4	398.0	1.01	21.79
							75	0.44	7.4	429.4	0.88	20.06
D0105	LEAD	OR	OR	5,870	26	10/03/79	CT	0.90	17.5	456.1	1.40	18.25
							CS	0.23	3.7	420.2	0.89	20.80
							HT	0.38	4.2	380.5	1.22	22.86
							75	0.41	6.6	416.8	1.08	20.71
D0112	LEAD	OR	OR	6,121	12	10/12/79	CT	1.49	22.7	451.2	1.27	18.06
							CS	0.34	4.1	411.2	0.86	21.20
							HT	0.54	6.8	385.5	1.21	22.30
							75	0.63	8.7	412.4	1.04	20.74

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
D0131	LEAD	OR	OR	6,341	15	11/13/79	CT	1.58	21.0	445.7	1.40	18.35
							CS	0.46	4.5	415.9	1.10	20.91
							HT	0.68	6.8	379.3	1.58	22.63
							75	0.75	8.5	412.1	1.29	20.74
D0137	LEAD	OR	OR	6,606	13	12/03/79	CT	1.22	19.0	436.2	1.39	18.89
							CS	0.56	5.2	408.3	0.91	21.22
							HT	0.73	6.4	376.3	1.44	22.84
							75	0.74	8.4	405.3	1.15	21.09
D0145	LEAD	OR	OR	6,831	14	12/15/79	CT	1.62	20.7	449.3	1.66	18.22
							CS	0.65	5.5	409.1	1.14	21.15
							HT	0.79	7.3	383.5	1.71	22.33
							75	0.89	9.1	410.4	1.40	20.76
D0147	LEAD	OR	OR	7,004	0	12/27/79	CT	1.17	16.0	510.1	1.80	16.47
							CS	0.70	3.8	413.3	1.09	21.06
							HT	0.90	5.1	381.5	1.82	22.62
							75	0.85	6.6	424.6	1.43	20.28
D0149	LEAD	OR	OR	7,024	0	01/14/80	CT	1.72	25.2	439.2	1.27	18.33
							CS	0.82	4.7	400.5	0.76	21.63
							HT	0.90	6.5	369.8	1.43	23.18
							75	1.02	9.4	400.1	1.04	21.23
D0152	LEAD	OR	OR	7,057	3	01/15/80	CT	1.61	20.2	444.4	1.40	18.44
							CS	0.73	4.1	397.7	0.86	21.84
							HT	0.81	5.5	369.0	1.59	23.35
							75	0.93	7.8	399.5	1.17	21.40
D0167	LEAD	OR	OR	7,369	28	01/22/80	CT	1.55	21.1	426.0	1.42	19.13
							CS	0.76	3.8	394.5	0.90	22.03
							HT	0.95	9.5	360.2	1.55	23.47
							75	0.97	8.9	391.6	1.19	21.71
D0170	LEAD	OR	OR	7,589	4	01/24/80	CT	1.50	19.5	433.4	1.35	18.93
							CS	0.83	3.5	388.9	0.84	22.36
							HT	1.22	11.8	359.4	1.38	23.24
							75	1.07	9.0	390.0	1.09	21.77
D0188	LEAD	OR	OR	7,959	31	01/31/80	CT	1.44	17.0	427.9	1.55	19.33
							CS	0.79	3.6	386.7	1.16	22.48
							HT	0.99	8.7	360.2	1.80	23.54
							75	0.98	7.7	387.9	1.41	22.01

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
R0195	LEAD	BP	OR	8,006	0	02/05/80	CT	1.68	24.2	401.0	2.24	19.97
							CS	1.54	10.8	360.1	3.10	23.24
							HT	1.46	14.2	338.0	2.98	24.32
							75	1.55	14.5	362.5	2.89	22.75
R0197	LEAD	BP	OR	8,034	0	02/06/80	CT	1.72	25.9	402.7	2.30	19.77
							CS	1.54	10.5	364.0	3.03	23.03
							HT	1.34	13.0	341.7	2.94	24.22
							75	1.52	14.4	365.9	2.85	22.57
R0201	UNL	BP	OR	8,062	17	02/07/80	CT	2.27	33.1	402.5	2.09	19.22
							CS	1.75	14.6	365.4	2.84	22.53
							HT	1.49	14.0	344.7	2.71	23.89
							75	1.79	18.3	367.4	2.65	22.09
R0203	UNL	BP	OR	8,090	0	02/08/80	CT	2.40	29.6	412.5	2.12	19.02
							CS	1.69	13.2	365.2	2.85	22.68
							HT	1.40	12.9	352.9	2.72	23.50
							75	1.76	16.5	371.6	2.67	22.02
R0214	UNL	BP	NW	8,125	0	02/15/80	CT	1.85	27.6	407.4	2.00	19.43
							CS	1.64	10.9	358.8	2.77	23.28
							HT	1.42	11.8	340.2	2.62	24.43
							75	1.62	14.6	363.7	2.57	22.65
R0217	UNL	BP	NW	8,155	0	02/18/80	CT	2.11	29.4	417.5	2.15	18.87
							CS	1.70	12.2	357.7	2.82	23.22
							HT	1.45	11.9	343.2	2.71	24.21
							75	1.72	15.7	366.0	2.65	22.41
R0220	UNL	OR	NW	8,183	0	02/19/80	CT	1.68	20.6	430.2	1.28	18.97
							CS	0.90	3.3	392.5	0.85	22.15
							HT	0.91	4.5	362.8	1.32	23.81
							75	1.06	7.2	392.2	1.07	21.81
R0223	UNL	OR	OR	8,215	12	02/20/80	CT	1.62	23.1	430.3	1.29	18.82
							CS	0.98	6.4	379.2	0.79	22.61
							HT	0.96	6.0	357.3	1.27	24.00
							75	1.11	9.7	383.8	1.03	22.05
R0229	UNL	OR	OR	8,513	15	02/23/80	CT	1.86	29.9	433.3	1.20	18.26
							CS	1.12	8.4	394.5	0.74	21.58
							HT	1.11	8.9	374.2	1.20	22.66
							75	1.27	13.0	397.0	0.96	21.06

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
R0234	UNL	OR	NW	8,550	0	02/26/80	CT	1.82	23.9	465.8	1.47	17.43
							CS	0.87	2.8	408.1	0.85	21.37
							HT	0.93	5.1	379.1	1.32	22.75
							75	1.08	7.8	412.1	1.10	20.75
R0239	UNL	OR	OR	8,763	14	02/28/80	CT	1.90	28.7	449.7	1.47	17.72
							CS	1.11	7.0	403.4	0.76	21.24
							HT	1.09	7.8	375.2	1.30	22.71
							75	1.27	11.7	405.2	1.05	20.76
R0242	UNL	OR	NW	8,794	0	02/29/80	CT	1.76	23.9	469.3	1.56	17.32
							CS	0.88	2.6	410.8	0.83	21.25
							HT	0.94	4.8	381.3	1.37	22.65
							75	1.08	7.6	414.8	1.13	20.63
R0250	UNL	OR	OR	9,002	14	03/06/80	CT	1.71	25.9	454.7	1.47	17.72
							CS	1.07	8.2	407.4	0.78	20.95
							HT	1.06	8.6	376.8	1.45	22.55
							75	1.20	12.0	408.8	1.10	20.57
R0258	UNL	OR	NW	9,039	0	03/11/80	CT	1.55	23.1	436.3	1.46	18.59
							CS	0.88	3.7	398.2	0.88	21.82
							HT	0.86	3.9	375.4	1.48	23.09
							75	1.01	7.8	399.8	1.16	21.38
R0262	UNL	OR	OR	9,240	14	03/13/80	CT	1.76	28.7	454.8	1.51	17.56
							CS	1.07	8.8	396.9	0.73	21.43
							HT	0.99	8.5	371.8	1.22	22.85
							75	1.19	12.8	402.0	1.02	20.84
R0263	UNL	OR	NW	9,277	0	03/14/80	CT	1.61	25.7	467.2	1.53	17.31
							CS	0.89	3.5	407.3	0.74	21.36
							HT	0.86	5.6	381.7	1.19	22.57
							75	1.03	8.6	412.6	1.03	20.67
R0267	UNL	OR	OR	10,305	52	03/18/80	CT	1.60	22.9	441.9	1.29	18.37
							CS	0.95	5.7	392.5	0.65	21.94
							HT	0.87	5.4	362.9	1.16	23.72
							75	1.06	9.1	394.6	0.92	21.52
R0270	UNL	OR	NW	10,335	0	03/19/80	CT	1.71	23.1	464.9	1.41	17.52
							CS	0.83	2.7	398.0	0.70	21.92
							HT	0.82	4.6	369.2	1.26	23.42
							75	1.01	7.4	403.9	1.00	21.19

APPENDIX C (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL TEST PROCEDURE RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	TEST	EMISSION RESULTS (gr/mi)				FUEL ECON.
								HC	CO	CO2	NOxc	MPG
R0274	UNL	OR	OR	11,365	57	03/24/80	CT	1.94	29.7	433.3	1.38	18.26
							CS	0.82	4.4	395.0	0.71	21.94
							HT	0.81	5.2	370.8	1.19	23.26
							75	1.05	9.8	396.3	0.98	21.39
R0276	UNL	OR	NW	11,392	0	03/25/80	CT	1.58	23.1	446.3	1.52	18.20
							CS	0.75	2.7	391.5	0.76	22.29
							HT	0.77	3.8	367.6	1.36	23.60
							75	0.93	7.2	396.2	1.08	21.62
R0281	UNL	BP	OR	11,422	0	03/31/80	CT	1.99	33.1	425.3	2.32	18.35
							CS	1.59	12.7	366.6	2.64	22.66
							HT	1.37	14.1	348.3	2.55	23.68
							75	1.61	17.3	373.7	2.55	21.86
R0283	UNL	BP	NW	11,450	0	04/01/80	CT	2.16	33.0	411.6	2.06	18.87
							CS	1.56	11.5	363.8	2.53	22.95
							HT	1.38	12.6	340.7	2.40	24.33
							75	1.63	16.2	367.3	2.40	22.30
R0287	UNL	RE	OR	11,482	10	04/15/80	CT	1.24	23.5	456.4	0.59	17.85
							CS	0.04	1.8	409.8	0.37	21.50
							HT	0.14	3.7	362.3	0.54	24.08
							75	0.32	6.8	406.4	0.46	21.23
R0288	UNL	RE	NW	11,514	0	04/16/80	CT	1.74	24.1	429.3	0.58	18.77
							CS	0.03	1.0	396.7	0.36	22.28
							HT	0.11	2.5	372.5	0.80	23.56
							75	0.41	6.2	396.8	0.53	21.77

CATALYST DETERIORATION/REJUVENATION

APPENDIX D - LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

EMISSION RESULTS (gr/mi) - Emission results in grams per mile

HC - Hydrocarbon emissions in grams per mile
CO - Carbon monoxide emissions in grams per mile
CO_2 - Carbon dioxide emissions in grams per mile
NOxc - Oxides of nitrogen emissions corrected for humidity in grams per mile

NOTE: Emission readings indicated by dash (-) reflect invalid or discarded test results.

FUEL ECON. MPG - Fuel economy in miles per gallon, calculated by the carbon balance method

APPENDIX D

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0001	UNL	OR	NA	8,316	0	05/16/79	1.80	3.8	506.9	1.39	17.11
D0003	UNL	OR	NA	8,394	0	05/21/79	0.44	4.3	464.9	1.16	18.76
D0005	UNL	OR	NA	8,442	8	05/23/79	0.44	5.4	456.6	1.13	19.02
D0008	UNL	BP	NA	8,694	5	06/05/79	3.66	9.1	437.0	1.70	19.17
D0010	UNL	BP	NA	8,733	0	06/12/79	2.88	7.7	416.5	1.75	20.28
D0013	UNL	BP	NA	8,760	6	06/14/79	3.35	8.4	417.8	1.64	20.10
D0034	LEAD	OR	NA	9,046	40	07/11/79	2.31	7.2	456.1	1.52	18.70
D0038	LEAD	OR	NA	9,307	15	07/24/79	2.15	2.6	450.5	1.66	19.24
D0072	LEAD	OR	NA	9,770	41	08/25/79	2.75	12.5	438.5	1.37	19.01
D0093	LEAD	OR	NA	10,069	20	09/13/79	3.13	6.1	439.8	1.56	19.33
D0109	UNL	BP	NA	10,446	72	10/10/79	3.26	12.1	431.4	1.70	19.26
D0118	UNL	RE	NA	10,532	0	10/24/79	0.55	13.0	461.2	1.09	18.37

AUTOMOTIVE TESTING LABORATORIES,INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX D (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0057	UNL	OR	NA	9,287	0	08/09/79	0.51	3.2	506.6	1.33	17.29
D0059	UNL	OR	NA	9,319	0	08/13/79	1.13	9.9	467.7	1.29	18.23
D0077	UNL	OR	NA	9,462	0	08/29/79	0.50	4.4	487.4	1.35	17.90
D0083	UNL	BP	NA	9,486	0	09/04/79	4.24	6.5	440.4	1.83	19.13
D0092	UNL	BP	NA	9,567	0	09/13/79	4.43	5.4	447.8	2.23	18.87
D0095	UNL	BP	NA	9,591	0	09/14/79	3.54	6.9	434.8	2.08	19.43
D0100	LEAD	OR	NA	9,814	39	09/25/79	1.87	0.7	459.3	1.52	19.03
D0119	LEAD	OR	NA	10,174	21	10/26/79	1.93	3.1	472.6	1.70	18.36
D0126	LEAD	OR	NA	10,407	20	11/12/79	1.96	2.5	458.6	1.68	18.94
D0136	LEAD	OR	NA	10,678	19	12/01/79	2.00	3.1	466.1	1.52	18.59
D0142	LEAD	OR	NA	10,922	18	12/10/79	2.33	5.1	461.2	1.50	18.62

APPENDIX D (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0004	UNL	OR	NA	6,818	7	05/22/79	0.11	0.1	407.5	1.25	21.75
D0006	UNL	OR	NA	6,857	2	05/23/79	0.08	0.0	378.2	1.06	23.45
D0007	UNL	OR	NA	6,886	0	05/25/79	0.09	0.0	384.0	1.35	23.09
D0009	UNL	BP	NA	6,950	0	06/08/79	2.01	2.2	390.0	2.71	22.20
D0011	UNL	BP	NA	7,014	6	06/13/79	1.81	2.3	372.8	2.56	23.23
D0014	UNL	BP	NA	7,069	0	06/23/79	1.64	1.8	361.1	2.55	24.05
D0049	LEAD	OR	NA	7,449	28	08/03/79	1.02	0.8	377.7	0.99	23.22
D0073	LEAD	OR	NA	7,767	27	08/25/79	1.13	0.7	374.2	1.16	23.42
D0088	LEAD	OR	NA	7,956	12	09/11/79	1.12	0.7	378.9	0.94	23.14
D0098	LEAD	OR	NA	8,161	13	09/19/79	1.17	0.9	377.0	0.83	23.23
D0103	LEAD	OR	NA	8,429	14	09/28/79	1.11	0.5	382.6	0.82	22.94
D0111	LEAD	OR	NA	8,618	12	10/11/79	1.04	0.6	385.9	0.88	22.75
D0121	LEAD	OR	NA	8,837	13	10/29/79	1.37	1.0	382.1	1.18	22.88
D0127	LEAD	OR	NA	9,017	13	11/12/79	0.94	0.7	375.7	1.10	23.37
D0135	LEAD	OR	NA	9,244	14	11/26/79	1.01	0.7	377.8	1.09	23.23
D0141	LEAD	OR	NA	9,430	12	12/10/79	0.98	0.7	363.5	0.95	24.14

APPENDIX D (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi)				FUEL ECON.
							HC	CO	CO2	NOxc	MPG
D0018	UNL	OR	NA	7,283	0	06/27/79	0.27	1.4	419.6	0.70	21.00
D0020	UNL	OR	NA	7,315	5	06/28/79	0.27	0.7	392.5	0.48	22.50
D0022	UNL	OR	NA	7,349	2	06/29/79	0.37	3.3	413.7	0.62	21.13
D0027	UNL	BP	NA	7,380	0	07/07/79	2.49	3.1	399.2	1.39	21.55
D0031	UNL	BP	NA	7,437	6	07/10/79	2.87	4.8	393.8	1.10	21.63
D0033	UNL	BP	NA	7,492	0	07/11/79	2.60	3.0	396.2	1.31	21.69
D0054	LEAD	OR	NA	7,955	40	08/08/79	1.49	2.6	420.7	0.64	20.66
D0082	LEAD	OR	NA	8,266	24	08/31/79	1.66	3.6	399.1	0.69	21.65
D0094	LEAD	OR	NA	8,358	12	09/13/79	1.89	2.7	407.5	0.66	21.25
D0101	LEAD	OR	NA	8,528	10	09/25/79	1.90	1.1	396.1	0.60	21.98
D0107	LEAD	OR	NA	8,727	15	10/05/79	1.85	1.4	399.2	0.64	21.79
D0113	LEAD	OR	NA	8,897	11	10/12/79	1.81	2.6	399.0	0.62	21.71
D0122	LEAD	OR	NA	9,213	16	10/30/79	1.75	1.5	404.1	0.62	21.54
D0124	LEAD	OR	NA	9,363	14	11/07/79	1.64	2.0	405.7	0.62	21.44
D0140	LEAD	OR	NA	9,627	14	12/07/79	1.59	2.1	400.5	0.68	21.71
D0146	LEAD	OR	NA	9,842	12	12/15/79	-	-	-	-	-

APPENDIX D (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi)				FUEL ECON.
							HC	CO	CO2	NOxc	MPG
D0021	UNL	OR	OR	4,179	5	06/28/79	0.11	0.2	534.8	0.48	16.57
D0023	UNL	OR	OR	4,210	0	06/29/79	0.24	0.7	539.3	0.49	16.40
D0026	UNL	OR	OR	4,282	0	07/05/79	0.17	0.5	531.5	0.40	16.66
D0028	UNL	BP	OR	4,319	8	07/07/79	2.15	19.1	493.6	1.07	16.73
D0030	UNL	BP	OR	4,345	0	07/09/79	2.18	16.8	497.4	1.10	16.72
D0032	UNL	BP	OR	4,373	0	07/10/79	2.15	17.8	491.2	1.07	16.87
D0065	LEAD	OR	OR	4,731	58	08/15/79	0.61	1.3	512.6	0.69	17.18
D0081	LEAD	OR	OR	4,902	14	08/31/79	1.77	25.1	483.8	0.68	16.78
D0090	LEAD	OR	OR	5,034	13	09/12/79	1.24	5.5	503.4	0.85	17.20
D0104	LEAD	OR	OR	5,250	16	09/28/79	0.97	4.4	504.2	0.92	17.26
D0108	LEAD	OR	OR	5,466	15	10/05/79	0.99	3.0	500.8	0.88	17.45
D0110	LEAD	OR	OR	5,719	17	10/11/79	1.36	4.6	500.3	1.09	17.34
D0123	LEAD	OR	OR	5,954	13	10/30/79	1.41	2.2	503.4	1.00	17.35
D0133	LEAD	OR	OR	6,050	13	11/17/79	1.65	6.7	501.0	1.08	17.17
D0139	LEAD	OR	OR	6,242	28	12/06/79	1.90	13.0	477.5	1.08	17.61
D0144	LEAD	OR	OR	6,637	16	12/15/79	1.65	1.6	506.1	1.21	17.28

APPENDIX D (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0039	UNL	OR	OR	5,795	0	07/25/79	0.05	0.2	434.3	0.43	20.41
D0044	UNL	OR	OR	5,831	0	07/27/79	0.09	0.0	392.6	2.44	22.59
D0055	UNL	OR	OR	5,907	0	08/09/79	0.05	0.9	410.4	0.24	21.55
D0067	UNL	BP	OR	6,002	5	08/16/79	1.09	11.5	383.7	3.22	21.90
D0078	UNL	BP	OR	6,075	0	08/30/79	1.05	11.5	382.9	3.16	21.95
D0080	UNL	BP	OR	6,101	0	08/31/79	1.13	11.3	386.0	3.43	21.79
D0091	LEAD	OR	OR	6,371	26	09/12/79	0.22	1.8	402.5	0.06	21.86
D0096	LEAD	OR	OR	6,597	13	09/17/79	0.28	2.1	398.5	0.20	22.04
D0099	LEAD	OR	OR	6,853	12	09/24/79	0.36	2.1	404.1	0.28	21.72
D0106	LEAD	OR	OR	7,036	13	10/04/79	0.58	2.0	403.4	0.40	21.73
D0120	LEAD	OR	OR	7,275	14	10/27/79	0.77	2.0	370.1	0.88	23.63
D0134	LEAD	OR	OR	7,516	12	11/21/79	0.72	2.3	424.1	0.87	20.64
D0138	LEAD	OR	OR	7,641	13	12/04/79	0.82	1.9	390.3	0.99	22.42
D0143	LEAD	OR	OR	7,934	17	12/11/79	0.86	2.4	391.0	1.29	22.33

APPENDIX D (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL SHORT CYCLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	EMISSION RESULTS (gr/mi) HC	CO	CO2	NOxc	FUEL ECON. MPG
D0043	UNL	OR	OR	5,182	0	07/27/79	0.07	2.8	368.4	0.35	23.79
D0056	UNL	OR	OR	5,271	0	08/09/79	0.07	1.7	355.8	0.31	24.74
D0060	UNL	OR	OR	5,299	0	08/13/79	0.07	2.6	357.5	0.41	24.53
D0064	UNL	BP	OR	5,330	0	08/14/79	1.11	9.2	336.5	2.72	25.04
D0075	UNL	BP	OR	5,384	0	08/27/79	1.19	9.4	324.6	2.71	25.87
D0076	UNL	BP	OR	5,408	0	08/29/79	0.99	10.0	350.4	1.36	24.04
D0097	LEAD	OR	OR	5,646	14	09/18/79	0.12	1.8	352.1	0.44	24.98
D0105	LEAD	OR	OR	5,870	26	10/03/79	0.19	1.3	341.3	0.68	25.81
D0112	LEAD	OR	OR	6,121	12	10/12/79	0.31	3.1	341.9	0.63	25.52
D0131	LEAD	OR	OR	6,341	15	11/13/79	0.33	2.3	331.3	0.93	26.42
D0137	LEAD	OR	OR	6,606	13	12/03/79	0.46	2.3	336.1	0.74	26.01
D0145	LEAD	OR	OR	6,831	14	12/15/79	0.46	2.5	330.2	0.97	26.44
D0147	LEAD	OR	OR	7,004	0	12/27/79	0.52	3.0	333.2	0.86	26.14

CATALYST DETERIORATION/REJUVENATION

APPENDIX E - LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

MODE - Identifies the mode of the Three Mode Test

BEFORE - Emission readings taken before the catalytic converter

AFTER - Emission readings taken after the catalytic converter

HC - Unburned hydrocarbon emissions in ppm hexane
CO - Carbon monoxide emissions in mole percent
NO - Oxides of nitrogen emissions in ppm

NOTE: Emission readings indicated by dash (-) reflect invalid or discarded test results.

THREE MODE HORSE POWER CHART

NADA WEIGHT RANGE	FTP ROAD LOAD ACT. H.P. RNG	25 MPH ACT HP	52 MPH ACT HP
1476 - 1725	4.51 - 5.50	4.0	7.5
1476 - 1725	5.51 - 6.50	4.5	8.5
1476 - 1725	6.51 - 7.50	4.5	9.5
1476 - 1725	7.51 - 8.50	4.5	10.5
1726 - 1975	4.51 - 5.50	5.0	8.0
1726 - 1975	5.51 - 6.50	5.0	9.0
1726 - 1975	6.51 - 7.50	5.0	10.0
1726 - 1975	7.51 - 8.50	5.0	10.5
1726 - 1975	8.51 - 9.50	5.0	12.0
1726 - 1975	9.51 - 10.50	5.0	12.5
1726 - 1975	10.51 - 11.50	5.0	14.0
1976 - 2225	5.51 - 6.50	5.5	9.5
1976 - 2225	6.51 - 7.50	5.5	10.5
1976 - 2225	7.51 - 8.50	5.5	11.0
1976 - 2225	8.51 - 9.50	5.5	12.0
1976 - 2225	9.51 - 10.50	5.5	13.0
1976 - 2225	10.51 - 11.50	5.5	14.0
1976 - 2225	11.51 - 12.50	5.5	15.0
2226 - 2475	6.51 - 7.50	6.0	10.5
2226 - 2475	7.51 - 8.50	6.0	11.5
2226 - 2475	8.51 - 9.50	6.0	12.5
2226 - 2475	9.51 - 10.50	6.0	13.5
2226 - 2475	10.51 - 11.50	6.0	14.5
2226 - 2475	11.51 - 12.50	6.0	15.5
2226 - 2475	12.51 - 13.50	6.0	16.5
2476 - 2850	5.51 - 6.50	6.5	10.5
2476 - 2850	6.5 - 7.50	6.5	11.0
2476 - 2850	7.51 - 8.50	6.5	12.0
2476 - 2850	8.51 - 9.50	6.5	13.0
2476 - 2850	9.51 - 10.50	6.5	13.5
2476 - 2850	10.51 - 11.50	6.5	14.5
2476 - 2850	11.51 - 12.50	6.5	16.0
2476 - 2850	12.51 - 13.50	6.5	16.5
2851 - 3350	5.51 - 6.50	7.5	11.0
2851 - 3350	6.51 - 7.50	7.5	12.0
2851 - 3350	7.51 - 8.50	7.5	13.0
2851 - 3350	8.51 - 9.50	7.5	13.5
2851 - 3350	9.51 - 10.50	7.5	14.5
2851 - 3350	10.51 - 11.50	7.5	15.5
2851 - 3350	11.51 - 12.50	7.5	16.0
2851 - 3350	12.51 - 13.50	7.5	17.5
2851 - 3350	13.51 - 14.50	7.5	18.5
3351 - 3850	6.51 - 7.50	8.5	13.0
3351 - 3850	7.51 - 8.50	8.5	14.0
3351 - 3850	8.51 - 9.50	8.5	14.5
3351 - 3850	9.51 - 10.50	8.5	15.5
3351 - 3850	10.51 - 11.50	8.5	16.5
3351 - 3850	11.51 - 12.50	8.5	17.0
3351 - 3850	12.51 - 13.50	8.5	18.0
3351 - 3850	13.51 - 14.50	8.5	19.0
3351 - 3850	14.51 - 15.50	8.5	20.0
3851 - 4350	6.51 - 7.50	9.5	13.5
3851 - 4350	7.51 - 8.50	9.5	14.5
3851 - 4350	8.51 - 9.50	9.5	15.5
3851 - 4350	9.51 - 10.50	9.5	16.5
3851 - 4350	10.51 - 11.50	9.5	17.0
3851 - 4350	11.51 - 12.50	9.5	18.0
3851 - 4350	12.51 - 13.50	9.5	19.0
3851 - 4350	13.51 - 14.50	9.5	19.5
3851 - 4350	14.51 - 15.50	9.5	20.5
3851 - 4350	15.51 - 16.50	9.5	21.5
4351 - 4850	6.51 - 7.50	10.5	15.0
4351 - 4850	7.51 - 8.50	10.5	15.5
4351 - 4850	8.51 - 9.50	10.5	16.5
4351 - 4850	9.51 - 10.50	10.5	17.0
4351 - 4850	10.51 - 11.50	10.5	18.0
4351 - 4850	11.51 - 12.50	10.5	19.0
4351 - 4850	12.51 - 13.50	10.5	19.5
4351 - 4850	13.51 - 14.50	10.5	21.0
4351 - 4850	14.51 - 15.50	10.5	21.5
4351 - 4850	15.51 - 16.50	10.5	22.5
4851 - 5350	6.51 - 7.50	11.5	16.0
4851 - 5350	7.51 - 8.50	11.5	16.5
4851 - 5350	8.51 - 9.50	11.5	17.0
4851 - 5350	9.51 - 10.50	11.5	18.0
4851 - 5350	10.51 - 11.50	11.5	19.0
4851 - 5350	11.51 - 12.50	11.5	19.5
4851 - 5350	12.51 - 13.50	11.5	20.5
4851 - 5350	13.51 - 14.50	11.5	21.5
4851 - 5350	14.51 - 15.50	11.5	22.5
4851 - 5350	15.51 - 16.50	11.5	23.0
4851 - 5350	16.51 - 17.50	11.5	24.0
5351 - 5850	7.51 - 8.50	12.5	17.5
5351 - 5850	8.51 - 9.50	12.5	18.5
5351 - 5850	9.51 - 10.50	12.5	19.0
5351 - 5850	10.51 - 11.50	12.5	20.0
5351 - 5850	11.51 - 12.50	12.5	20.5
5351 - 5850	12.51 - 13.50	12.5	21.5
5351 - 5850	13.51 - 14.50	12.5	22.0
5351 - 5850	14.51 - 15.50	12.5	23.0
5351 - 5850	15.51 - 16.50	12.5	24.0
5351 - 5850	16.51 - 17.50	13.0	25.0
5351 - 5850	17.51 - 18.50	13.0	25.5

APPENDIX E

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0001	UNL	OR	NA	8,316	0	05/16/79	52 MPH				75	.01	544
							25 MPH				71	.01	365
							IDLE (D)				60	.01	181
							IDLE (N)				73	.01	85
D0003	UNL	OR	NA	8,394	0	05/21/79	52 MPH				29	.02	553
							25 MPH				27	.02	385
							IDLE (D)				15	.02	194
							IDLE (N)				28	.02	86
D0005	UNL	OR	NA	8,442	8	05/23/79	52 MPH				76	.00	556
							25 MPH				72	.00	391
							IDLE (D)				60	.01	170
							IDLE (N)				70	.01	74
D0008	UNL	BP	NA	8,694	5	06/05/79	52 MPH				190	.17	595
							25 MPH				217	.09	478
							IDLE (D)				249	.74	122
							IDLE (N)				637	.41	47
D0010	UNL	BP	NA	8,733	0	06/12/79	52 MPH				169	.12	717
							25 MPH				194	.07	523
							IDLE (D)				222	.97	146
							IDLE (N)				478	.62	48
D0013	UNL	BP	NA	8,760	6	06/14/79	52 MPH				170	.17	761
							25 MPH				203	.08	531
							IDLE (D)				234	.88	131
							IDLE (N)				629	.46	48
D0034	LEAD	OR	NA	9,046	40	07/11/79	52 MPH				189	.23	600
							25 MPH				218	.07	409
							IDLE (D)				224	.15	139
							IDLE (N)				392	.10	60
D0038	LEAD	OR	NA	9,307	15	07/24/79	52 MPH				191	.28	611
							25 MPH				214	.12	410
							IDLE (D)				206	.27	166
							IDLE (N)				446	.17	69
D0072	LEAD	OR	NA	9,770	41	08/25/79	52 MPH				217	.17	504
							25 MPH				252	.09	330
							IDLE (D)				250	.34	119
							IDLE (N)				538	.17	55

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0093	LEAD	OR	NA	10,069	20	09/13/79	52 MPH				197	.16	455
							25 MPH				227	.08	271
							IDLE (D)				223	.39	75
							IDLE (N)				470	.37	41
D0109	UNL	BP	NA	10,446	72	10/10/79	52 MPH				230	.16	815
							25 MPH				244	.11	645
							IDLE (D)				267	.79	177
							IDLE (N)				497	.53	52
D0118	UNL	RE	NA	10,532	0	10/24/79	52 MPH				0	.05	490
							25 MPH				0	.05	282
							IDLE (D)				0	.05	156
							IDLE (N)				0	.06	71
R0154	LEAD	OR	NA	11,750	91	01/16/80	52 MPH	169	.21	482	155	.24	507
							25 MPH	210	.24	301	195	.16	346
							IDLE (D)	272	1.28	98	273	1.14	100
							IDLE (N)	434	.94	54	474	.87	57
R0157	LEAD	OR	NA	11,795	3	01/17/80	52 MPH	158	.24	442	137	.24	477
							25 MPH	201	.24	281	183	.18	326
							IDLE (D)	244	.69	108	263	.65	100
							IDLE (N)	516	.54	48	546	.43	57
R0165	LEAD	OR	NA	11,831	6	01/22/80	52 MPH	175	.24	572	131	.26	602
							25 MPH	189	.19	422	165	.17	457
							IDLE (D)	232	1.06	141	251	.87	144
							IDLE (N)	516	.67	53	557	.58	61
R0173	UNL	BP	NA	11,877	22	01/25/80	52 MPH				143	.27	597
							25 MPH				175	.15	497
							IDLE (D)				251	1.52	86
							IDLE (N)				598	1.01	48
R0178	UNL	OR	NA	11,909	0	01/28/80	52 MPH	157	.23	512	119	.09	562
							25 MPH	207	.12	362	186	.05	392
							IDLE (D)	286	1.17	107	293	.52	106
							IDLE (N)	578	.82	42	598	.25	53
R0184	UNL	OR	NA	12,118	17	01/30/80	52 MPH	140	.18	512	107	.09	562
							25 MPH	206	.13	336	180	.06	372
							IDLE (D)	260	1.09	95	254	.62	102
							IDLE (N)	485	.92	41	516	.43	55

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0189	UNL	OR	NA	12,331	18	02/01/80	52 MPH	152	.17	452	113	.07	522
							25 MPH	218	.12	341	186	.05	392
							IDLE (D)	266	1.09	91	249	.60	102
							IDLE (N)	423	1.01	41	464	.58	48
R0216	UNL	OR	NA	12,612	19	02/15/80	52 MPH	182	.19	392	131	.06	447
							25 MPH	207	.13	271	190	.03	321
							IDLE (D)	247	1.52	84	261	.66	91
							IDLE (N)	608	.86	44	689	.09	55
R0222	UNL	OR	NA	12,823	20	02/19/80	52 MPH	182	.18	392	105	.04	331
							25 MPH	223	.14	266	151	.02	220
							IDLE (D)	253	1.21	76	210	.37	55
							IDLE (N)	619	.84	40	535	.08	42
R0232	UNL	OR	NA	13,860	61	02/25/80	52 MPH	185	.18	382	141	.05	412
							25 MPH	223	.13	261	191	.03	291
							IDLE (D)	261	1.87	72	268	1.39	74
							IDLE (N)	427	1.58	41	471	.66	47
R0244	UNL	OR	NA	14,894	65	03/04/80	52 MPH	141	.15	452	114	.04	492
							25 MPH	176	.14	321	157	.02	362
							IDLE (D)	219	1.83	66	250	1.39	75
							IDLE (N)	556	1.33	43	577	.43	50
R0247	UNL	RE	NA	14,934	0	03/05/80	52 MPH	157	.20	402	21	.01	432
							25 MPH	207	.15	271	30	.01	281
							IDLE (D)	233	1.80	63	225	1.04	29
							IDLE (N)	659	1.15	38	95	.27	10

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0057	UNL	OR	NA	9,287	0	08/09/79	52 MPH				72	.01	612
							25 MPH				76	.00	295
							IDLE (D)				62	.00	257
							IDLE (N)				121	.00	93
D0059	UNL	OR	NA	9,319	0	08/13/79	52 MPH				-	-	-
							25 MPH				81	.01	278
							IDLE (D)				61	.01	243
							IDLE (N)				112	.01	95
D0077	UNL	OR	NA	9,462	0	08/29/79	52 MPH				-	-	-
							25 MPH				82	.03	265
							IDLE (D)				65	.03	230
							IDLE (N)				128	.03	83
D0083	UNL	BP	NA	9,486	0	09/04/79	52 MPH				207	.12	610
							25 MPH				246	.07	444
							IDLE (D)				242	.25	257
							IDLE (N)				668	.24	63
D0092	UNL	BP	NA	9,567	0	09/13/79	52 MPH				-	-	-
							25 MPH				215	.07	431
							IDLE (D)				217	.17	230
							IDLE (N)				556	.20	54
D0095	UNL	BP	NA	9,591	0	09/14/79	52 MPH				237	.12	678
							25 MPH				243	.09	545
							IDLE (D)				218	.21	300
							IDLE (N)				629	.24	71
D0100	LEAD	OR	NA	9,814	39	09/25/79	52 MPH				155	.07	546
							25 MPH				216	.04	281
							IDLE (D)				152	.03	273
							IDLE (N)				471	.03	82
D0119	LEAD	OR	NA	10,174	21	10/26/79	52 MPH				136	.11	555
							25 MPH				187	.07	352
							IDLE (D)				137	.06	310
							IDLE (N)				364	.04	87
D0126	LEAD	OR	NA	10,407	20	11/12/79	52 MPH				113	.10	479
							25 MPH				170	.08	315
							IDLE (D)				128	.07	308
							IDLE (N)				395	.06	103

AUTOMOTIVE TESTING LABORATORIES,INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0136	LEAD	OR	NA	10,678	19	12/01/79	52 MPH				114	.11	587
							25 MPH				159	.08	352
							IDLE (D)				118	.07	246
							IDLE (N)				397	.05	67
D0142	LEAD	OR	NA	10,922	18	12/10/79	52 MPH				136	.10	518
							25 MPH				175	.08	377
							IDLE (D)				125	.07	322
							IDLE (N)				390	.04	102
D0148	LEAD	OR	NA	11,186	17	01/14/80	52 MPH	-	-	-	-	-	-
							25 MPH	272	.08	224	226	.06	238
							IDLE (D)	313	.19	139	253	.07	151
							IDLE (N)	1071	.25	50	972	.13	66
D0151	LEAD	OR	NA	11,223	0	01/15/80	52 MPH	189	.10	447	134	.09	547
							25 MPH	251	.07	271	195	.05	331
							IDLE (D)	241	.27	137	241	.06	149
							IDLE (N)	788	.34	53	632	.16	65
D0163	LEAD	OR	NA	11,256	0	01/21/80	52 MPH	181	.14	582	127	.14	692
							25 MPH	230	.11	417	198	.08	427
							IDLE (D)	246	.24	198	247	.07	210
							IDLE (N)	885	.30	61	767	.17	79
D0169	LEAD	OR	NA	11,593	37	01/24/80	52 MPH	157	.14	652	112	.18	736
							25 MPH	218	.10	382	169	.09	417
							IDLE (D)	221	.31	187	183	.19	210
							IDLE (N)	788	.27	64	767	.18	80
D0174	LEAD	OR	NA	11,841	4	01/26/80	52 MPH	168	.14	562	112	.15	687
							25 MPH	204	.11	392	165	.08	412
							IDLE (D)	241	.24	187	184	.13	199
							IDLE (N)	672	.30	66	661	.18	78
D0190	UNL	BP	NA	11,876	21	02/01/80	52 MPH				149	.13	552
							25 MPH				198	.10	452
							IDLE (D)				353	.33	149
							IDLE (N)				1004	.37	45
R0200	UNL	OR	NA	11,946	0	02/07/80	52 MPH	149	.14	562	110	.07	617
							25 MPH	269	.11	215	217	.05	321
							IDLE (D)	393	.36	123	313	.07	155
							IDLE (N)	1071	.45	43	896	.08	65

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0212	UNL	OR	NA	12,133	19	02/14/80	52 MPH	203	.11	412	132	.04	487
							25 MPH	277	.09	215	239	.03	240
							IDLE (D)	294	.27	155	272	.02	163
							IDLE (N)	1057	.32	48	943	.03	77
R0219	UNL	OR	NA	12,347	19	02/18/80	52 MPH	200	.12	422	129	.06	477
							25 MPH	261	.09	220	216	.04	231
							IDLE (D)	233	.37	190	216	.03	203
							IDLE (N)	860	.34	52	785	.04	87
R0224	UNL	OR	NA	12,621	20	02/20/80	52 MPH	182	.12	437	120	.04	532
							25 MPH	328	.10	149	272	.03	189
							IDLE (D)	225	.21	208	230	.02	218
							IDLE (N)	1057	.26	58	1018	.02	94
R0230	UNL	OR	NA	12,902	41	02/23/80	52 MPH	160	.13	472	114	.05	552
							25 MPH	273	.09	224	263	.03	241
							IDLE (D)	207	.48	174	182	.03	185
							IDLE (N)	869	.41	59	756	.03	81
R0243	UNL	OR	NA	13,930	69	02/29/80	52 MPH	205	.12	412	117	.03	472
							25 MPH	294	.10	215	247	.02	234
							IDLE (D)	194	.28	182	191	.01	187
							IDLE (N)	869	.34	57	775	.02	84
R0246	UNL	OR	NA	14,940	71	03/05/80	52 MPH	205	.11	422	105	.03	512
							25 MPH	316	.09	190	236	.02	213
							IDLE (D)	207	.29	210	182	.01	218
							IDLE (N)	869	.32	66	794	.02	97
R0252	UNL	RE	NA	14,990	0	03/07/80	52 MPH	163	.11	522	9	.01	567
							25 MPH	263	.09	241	9	.01	215
							IDLE (D)	188	.24	372	8	.01	218
							IDLE (N)	514	.33	104	6	.01	94

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0004	UNL	OR	NA	6,818	7	05/22/79	52 MPH				-	-	-
							25 MPH				79	0.00	246
							IDLE (D)				70	.00	146
							IDLE (N)				70	.00	45
D0006	UNL	OR	NA	6,857	2	05/23/79	52 MPH				-	-	-
							25 MPH				69	0.00	223
							IDLE (D)				60	.00	199
							IDLE (N)				61	.00	54
D0007	UNL	OR	NA	6,886	0	05/25/79	52 MPH				-	-	-
							25 MPH				66	.00	420
							IDLE (D)				59	.01	237
							IDLE (N)				60	.00	55
D0009	UNL	BP	NA	6,950	0	06/08/79	52 MPH				141	.08	708
							25 MPH				-	-	-
							IDLE (D)				218	.08	229
							IDLE (N)				256	.14	54
D0011	UNL	BP	NA	7,014	6	06/13/79	52 MPH				137	.06	925
							25 MPH				-	-	-
							IDLE (D)				198	.06	250
							IDLE (N)				240	.11	59
D0014	UNL	BP	NA	7,069	0	06/23/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				214	.07	253
							IDLE (N)				211	.12	71
D0049	LEAD	OR	NA	7,449	28	08/03/79	52 MPH				118	.06	525
							25 MPH				-	-	-
							IDLE (D)				137	.03	161
							IDLE (N)				232	.03	39
D0073	LEAD	OR	NA	7,767	27	08/25/79	52 MPH				142	.06	818
							25 MPH				-	-	-
							IDLE (D)				174	.03	116
							IDLE (N)				259	.03	42
D0088	LEAD	OR	NA	7,956	12	09/11/79	52 MPH				137	.06	601
							25 MPH				-	-	-
							IDLE (D)				168	.03	135
							IDLE (N)				197	.03	52

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0098	LEAD	OR	NA	8,161	13	09/19/79	52 MPH				148	.06	763
							25 MPH				-	-	-
							IDLE (D)				179	.04	168
							IDLE (N)				234	.04	53
D0103	LEAD	OR	NA	8,429	14	09/28/79	52 MPH				131	.08	716
							25 MPH				-	-	-
							IDLE (D)				157	.06	141
							IDLE (N)				211	.06	47
D0111	LEAD	OR	NA	8,618	12	10/11/79	52 MPH				143	.08	844
							25 MPH				-	-	-
							IDLE (D)				174	.06	164
							IDLE (N)				211	.06	58
D0121	LEAD	OR	NA	8,837	13	10/29/79	52 MPH				136	.07	868
							25 MPH				175	.05	358
							IDLE (D)				180	.05	153
							IDLE (N)				221	.05	57
D0127	LEAD	OR	NA	9,017	13	11/12/79	52 MPH				65	.09	798
							25 MPH				90	.07	390
							IDLE (D)				101	.07	163
							IDLE (N)				123	.07	59
D0135	LEAD	OR	NA	9,244	14	11/26/79	52 MPH				75	.07	848
							25 MPH				104	.05	320
							IDLE (D)				109	.04	149
							IDLE (N)				119	.04	52
D0141	LEAD	OR	NA	9,430	12	12/10/79	52 MPH				82	.07	817
							25 MPH				-	-	-
							IDLE (D)				120	.06	161
							IDLE (N)				133	.06	60
D0155	LEAD	OR	NA	9,856	19	01/16/80	52 MPH	101	.10	997	79	.09	950
							25 MPH	122	.09	637	109	.07	592
							IDLE (D)	235	.11	158	165	.05	108
							IDLE (N)	495	.17	45	393	.09	44
D0158	LEAD	OR	NA	9,889	0	01/17/80	52 MPH	101	.10	915	79	.09	927
							25 MPH	145	.10	592	104	.07	552
							IDLE (D)	220	.11	136	155	.05	91
							IDLE (N)	526	.18	40	474	.07	40

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0160	LEAD	OR	NA	9,922	0	01/18/80	52 MPH	98	.10	974	73	.09	997
							25 MPH	143	.10	677	104	.07	637
							IDLE (D)	223	.11	109	151	.05	95
							IDLE (N)	588	.18	42	536	.07	40
D0164	UNL	BP	NA	9,961	19	01/21/80	52 MPH				88	.10	1289
							25 MPH				115	.09	837
							IDLE (D)				186	.13	158
							IDLE (N)				495	.20	44
R0168	UNL	OR	NA	9,993	0	01/24/80	52 MPH	88	.10	1145	62	.09	1020
							25 MPH	134	.10	422	101	.07	432
							IDLE (D)	191	.13	173	128	.06	136
							IDLE (N)	516	.20	40	423	.09	42
R0176	UNL	OR	NA	10,220	16	01/26/80	52 MPH	89	.10	1008	64	.08	985
							25 MPH	137	.11	382	98	.06	407
							IDLE (D)	183	.13	140	110	.05	104
							IDLE (N)	495	.21	41	373	.06	40
R0182	UNL	OR	NA	10,490	16	01/29/80	52 MPH	91	.11	1133	61	.08	1066
							25 MPH	136	.10	402	95	.06	487
							IDLE (D)	183	.14	220	109	.05	115
							IDLE (N)	546	.23	41	403	.09	36
R0187	UNL	OR	NA	10,739	15	01/31/80	52 MPH	92	.10	948	60	.07	935
							25 MPH	137	.10	392	94	.05	412
							IDLE (D)	178	.13	128	98	.05	107
							IDLE (N)	373	.21	42	237	.06	40
R0206	UNL	OR	NA	10,931	16	02/09/80	52 MPH	88	.10	931	59	.06	864
							25 MPH	134	.10	367	92	.05	382
							IDLE (D)	181	.13	123	92	.05	88
							IDLE (N)	434	.22	40	363	.09	38
R0231	UNL	OR	NA	12,015	62	02/25/80	52 MPH	95	.08	789	65	.04	770
							25 MPH	163	.08	251	114	.03	261
							IDLE (D)	207	.11	115	98	.02	102
							IDLE (N)	556	.19	38	255	.02	41
R0245	UNL	OR	NA	13,046	61	03/05/80	52 MPH	101	.08	931	65	.04	918
							25 MPH	148	.08	311	101	.03	341
							IDLE (D)	200	.11	141	95	.02	131
							IDLE (N)	449	.19	48	213	.02	49

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0251	UNL	RE	NA	13,114	0	03/07/80	52 MPH	101	.08	952	36	.01	864
							25 MPH	157	.08	341	54	.01	311
							IDLE (D)	203	.11	133	54	.01	104
							IDLE (N)	514	.19	41	191	.01	47

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0018	UNL	OR	NA	7,283	0	06/27/79	52 MPH				55	0.00	510
							25 MPH				-	-	-
							IDLE (D)				43	0.00	119
							IDLE (N)				46	0.00	52
D0020	UNL	OR	NA	7,315	5	06/28/79	52 MPH				64	.00	426
							25 MPH				-	-	-
							IDLE (D)				52	.00	95
							IDLE (N)				55	.00	32
D0022	UNL	OR	NA	7,349	2	06/29/79	52 MPH				72	.02	425
							25 MPH				-	-	-
							IDLE (D)				60	.03	93
							IDLE (N)				65	.03	48
D0027	UNL	BP	NA	7,380	0	07/07/79	52 MPH				136	.09	632
							25 MPH				-	-	-
							IDLE (D)				213	.11	132
							IDLE (N)				333	.18	42
D0031	UNL	BP	NA	7,437	6	07/10/79	52 MPH				136	.08	538
							25 MPH				-	-	-
							IDLE (D)				227	.10	126
							IDLE (N)				330	.17	42
D0033	UNL	BP	NA	7,492	0	07/11/79	52 MPH				167	.08	645
							25 MPH				-	-	-
							IDLE (D)				235	.09	149
							IDLE (N)				345	.16	44
D0054	LEAD	OR	NA	7,955	40	08/08/79	52 MPH				72	.06	490
							25 MPH				-	-	-
							IDLE (D)				130	.02	102
							IDLE (N)				261	.03	45
D0082	LEAD	OR	NA	8,266	24	08/31/79	52 MPH				121	.05	493
							25 MPH				-	-	-
							IDLE (D)				179	.02	81
							IDLE (N)				309	.02	37
D0094	LEAD	OR	NA	8,358	12	09/13/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				164	.02	85
							IDLE (N)				278	.02	38

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0101	LEAD	OR	NA	8,528	10	09/25/79	52 MPH				144	.07	467
							25 MPH				-	-	-
							IDLE (D)				189	.05	109
							IDLE (N)				348	.06	51
D0107	LEAD	OR	NA	8,727	15	10/05/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				208	.04	113
							IDLE (N)				350	.04	48
D0113	LEAD	OR	NA	8,897	11	10/12/79	52 MPH				133	.09	514
							25 MPH				-	-	-
							IDLE (D)				191	.06	113
							IDLE (N)				319	.07	52
D0122	LEAD	OR	NA	9,213	16	10/30/79	52 MPH				109	.05	573
							25 MPH				160	.04	169
							IDLE (D)				159	.02	128
							IDLE (N)				266	.03	55
D0124	LEAD	OR	NA	9,363	14	11/07/79	52 MPH				75	.11	551
							25 MPH				137	.10	165
							IDLE (D)				151	.07	119
							IDLE (N)				286	.07	52
D0140	LEAD	OR	NA	9,627	14	12/07/79	52 MPH				90	.07	647
							25 MPH				139	.06	186
							IDLE (D)				188	.05	144
							IDLE (N)				179	.05	57
D0146	LEAD	OR	NA	9,842	12	12/15/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				149	.02	139
							IDLE (N)				220	.02	53
D0156	LEAD	OR	NA	10,098	9	01/16/80	52 MPH	112	.12	677	83	.10	582
							25 MPH	160	.10	202	130	.07	210
							IDLE (D)	273	.12	115	207	.06	86
							IDLE (N)	444	.20	52	434	.10	42
D0159	LEAD	OR	NA	10,134	0	01/17/80	52 MPH	122	.12	572	83	.09	492
							25 MPH	166	.10	174	127	.07	178
							IDLE (D)	323	.13	86	253	.06	70
							IDLE (N)	661	.22	45	536	.08	39

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APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0172	UNL	BP	NA	10,165	18	01/25/80	52 MPH				89	.12	617
							25 MPH				146	.11	225
							IDLE (D)				265	.14	104
							IDLE (N)				454	.22	117
R0177	UNL	OR	NA	10,199	0	01/26/80	52 MPH	98	.12	627	68	.09	562
							25 MPH	160	.11	170	112	.08	181
							IDLE (D)	260	.14	66	175	.05	64
							IDLE (N)	619	.23	34	546	.08	40
R0180	UNL	OR	NA	10,385	16	01/28/80	52 MPH	89	.11	562	64	.08	552
							25 MPH	146	.11	164	107	.07	175
							IDLE (D)	218	.14	83	142	.05	83
							IDLE (N)	640	.23	34	546	.06	39
R0186	UNL	OR	NA	10,633	16	01/31/80	52 MPH	89	.11	547	62	.08	532
							25 MPH	134	.11	174	104	.06	179
							IDLE (D)	241	.14	67	146	.04	68
							IDLE (N)	507	.24	39	444	.07	37
R0205	UNL	OR	NA	10,864	15	02/09/80	52 MPH	98	.12	622	62	.08	567
							25 MPH	149	.11	156	104	.06	182
							IDLE (D)	243	.14	64	155	.04	63
							IDLE (N)	788	.23	24	557	.06	34
R0211	UNL	OR	NA	11,082	16	02/14/80	52 MPH	100	.09	532	70	.05	522
							25 MPH	185	.08	144	132	.03	170
							IDLE (D)	250	.11	77	169	.02	76
							IDLE (N)	756	.21	28	514	.02	44
R0233	UNL	OR	NA	12,119	67	02/25/80	52 MPH	117	.09	522	74	.05	507
							25 MPH	200	.09	152	129	.03	155
							IDLE (D)	316	.12	63	148	.01	70
							IDLE (N)	887	.22	27	503	.02	47
R0248	UNL	OR	NA	13,149	61	03/06/80	52 MPH	95	.08	692	63	.04	672
							25 MPH	216	.08	215	141	.03	231
							IDLE (D)	255	.11	84	135	.01	89
							IDLE (N)	598	.20	32	339	.02	53
R0253	UNL	RE	NA	13,179	0	03/07/80	52 MPH	117	.08	672	27	.01	562
							25 MPH	216	.09	205	48	.01	213
							IDLE (D)	230	.11	91	27	.01	81
							IDLE (N)	756	.22	30	117	.01	51

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0021	UNL	OR	OR	4,179	5	06/28/79	52 MPH				57	.01	74
							25 MPH				50	.00	51
							IDLE (D)				47	.01	38
							IDLE (N)				48	.02	13
D0023	UNL	OR	OR	4,210	0	06/29/79	52 MPH				116	.77	106
							25 MPH				138	.68	75
							IDLE (D)				185	.36	36
							IDLE (N)				81	.05	1
D0026	UNL	OR	OR	4,282	0	07/05/79	52 MPH				51	.02	115
							25 MPH				49	.01	117
							IDLE (D)				47	.02	42
							IDLE (N)				51	.06	20
D0028	UNL	BP	OR	4,319	8	07/07/79	52 MPH				144	.40	650
							25 MPH				165	.28	431
							IDLE (D)				191	.26	338
							IDLE (N)				154	.40	74
D0030	UNL	BP	OR	4,345	0	07/09/79	52 MPH				150	.76	621
							25 MPH				176	.63	396
							IDLE (D)				198	.35	329
							IDLE (N)				151	.24	78
D0032	UNL	BP	OR	4,373	0	07/10/79	52 MPH				146	.61	694
							25 MPH				166	.27	444
							IDLE (D)				196	.24	378
							IDLE (N)				172	.38	76
D0065	LEAD	OR	OR	4,731	58	08/15/79	52 MPH				95	.04	271
							25 MPH				116	.09	210
							IDLE (D)				206	.35	204
							IDLE (N)				161	.31	31
D0081	LEAD	OR	OR	4,902	14	08/31/79	52 MPH				153	.56	370
							25 MPH				150	.41	293
							IDLE (D)				161	.12	93
							IDLE (N)				118	.07	20
D0090	LEAD	OR	OR	5,034	13	09/12/79	52 MPH				-	-	-
							25 MPH				184	1.00	323
							IDLE (D)				192	.59	300
							IDLE (N)				132	.12	32

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0104	LEAD	OR	OR	5,250	16	09/28/79	52 MPH				126	.16	378
							25 MPH				134	.16	269
							IDLE (D)				170	.19	323
							IDLE (N)				145	.15	47
D0108	LEAD	OR	OR	5,466	15	10/05/79	52 MPH				-	-	-
							25 MPH				132	.04	402
							IDLE (D)				166	.11	331
							IDLE (N)				150	.19	34
D0110	LEAD	OR	OR	5,719	17	10/11/79	52 MPH				-	-	-
							25 MPH				165	.11	405
							IDLE (D)				198	.16	381
							IDLE (N)				169	.26	54
D0123	LEAD	OR	OR	5,954	13	10/30/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				142	.12	379
							IDLE (N)				113	.11	57
D0133	LEAD	OR	OR	6,050	13	11/17/79	52 MPH				80	.09	432
							25 MPH				84	.05	348
							IDLE (D)				101	.08	373
							IDLE (N)				120	.14	62
D0139	LEAD	OR	OR	6,242	28	12/06/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				171	.52	387
							IDLE (N)				160	.15	71
D0144	LEAD	OR	OR	6,637	16	12/15/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				107	.02	420
							IDLE (N)				124	.13	75
D0161	LEAD	OR	OR	6,875	7	01/18/80	52 MPH	149	1.01	985	119	.85	602
							25 MPH	171	.94	462	107	.12	566
							IDLE (D)	186	.58	527	171	.26	412
							IDLE (N)	146	.09	90	143	.28	54
D0166	LEAD	OR	OR	6,944	4	01/22/80	52 MPH	151	.92	918	134	.82	672
							25 MPH	158	.54	572	104	.11	377
							IDLE (D)	192	.62	602	174	.31	527
							IDLE (N)	146	.78	78	160	.34	54

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APPENDIX E (CONT'D)

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LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0196	LEAD	OR	OR	7,057	17	02/05/80	52 MPH	131	1.12	780	133	1.59	672
							25 MPH	158	.89	432	101	.24	203
							IDLE (D)	171	.47	622	161	.18	592
							IDLE (N)	158	.69	76	180	.18	73
D0228	LEAD	OR	OR	7,152	5	02/23/80	52 MPH	154	1.15	702	145	1.18	677
							25 MPH	175	.79	462	111	.11	286
							IDLE (D)	191	.52	522	176	.14	472
							IDLE (N)	171	.66	79	166	.21	71
R0235	LEAD	BP	OR	7,184	10	02/26/80	52 MPH				151	1.33	682
							25 MPH				155	.47	412
							IDLE (D)				185	.54	452
							IDLE (N)				160	.70	77
R0237	LEAD	BP	OR	7,213	0	02/27/80	52 MPH				146	.94	789
							25 MPH				160	.58	442
							IDLE (D)				185	.47	482
							IDLE (N)				160	.62	80
R0240	UNL	BP	OR	7,241	18	02/28/80	52 MPH				120	.41	761
							25 MPH				145	.54	402
							IDLE (D)				185	.66	422
							IDLE (N)				166	.79	72
R0241	UNL	BP	OR	7,269	0	02/29/80	52 MPH				117	.36	731
							25 MPH				141	.50	382
							IDLE (D)				182	.62	412
							IDLE (N)				163	.84	70
R0249	UNL	BP	NW	7,302	0	03/06/80	52 MPH				111	.25	1043
							25 MPH				129	.29	612
							IDLE (D)				163	.34	652
							IDLE (N)				132	.47	89
R0254	UNL	BP	NW	7,329	0	03/10/80	52 MPH				109	.36	968
							25 MPH				126	.30	557
							IDLE (D)				163	.36	592
							IDLE (N)				141	.50	88
R0260	UNL	OR	NW	7,358	0	03/11/80	52 MPH	114	.27	1031	71	.02	672
							25 MPH	132	.32	642	86	.02	351
							IDLE (D)	166	.40	722	145	.06	572
							IDLE (N)	120	.47	90	117	.08	84

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
R0261	UNL	OR	OR	7,390	16	03/12/80	52 MPH	126	.37	1043	77	.02	682
							25 MPH	148	.50	672	89	.04	372
							IDLE (D)	176	.62	692	157	.24	592
							IDLE (N)	145	.66	91	129	.23	79
R0264	UNL	OR	OR	7,629	13	03/14/80	52 MPH	117	.35	682	63	.02	432
							25 MPH	129	.50	462	80	.03	261
							IDLE (D)	179	.66	512	145	.27	442
							IDLE (N)	114	.70	81	120	.21	70
R0266	UNL	OR	NW	7,666	0	03/17/80	52 MPH	114	.27	818	60	.02	472
							25 MPH	129	.34	542	77	.02	291
							IDLE (D)	166	.43	632	138	.05	492
							IDLE (N)	126	.47	86	114	.07	75
R0269	UNL	OR	OR	7,910	20	03/19/80	52 MPH	114	.36	702	57	.02	432
							25 MPH	126	.47	502	71	.02	261
							IDLE (D)	179	.58	382	163	.24	271
							IDLE (N)	151	.75	78	151	.32	67
R0272	UNL	OR	NW	7,941	0	03/21/80	52 MPH	112	.28	722	60	.02	482
							25 MPH	135	.33	492	71	.01	257
							IDLE (D)	176	.36	341	145	.04	261
							IDLE (N)	138	.50	78	120	.08	68
R0280	UNL	OR	OR	8,144	15	03/28/80	52 MPH	101	.28	682	60	.02	442
							25 MPH	129	.33	462	68	.02	240
							IDLE (D)	183	.38	331	148	.04	241
							IDLE (N)	141	.50	77	101	.03	63
R0282	UNL	OR	NW	8,174	0	03/31/80	52 MPH	101	.29	702	57	.02	437
							25 MPH	123	.34	442	68	.01	233
							IDLE (D)	176	.34	331	145	.04	203
							IDLE (N)	163	.50	79	111	.08	60
R0285	UNL	OR	OR	8,473	23	04/03/80	52 MPH	98	.33	682	65	.05	141
							25 MPH	123	.39	482	68	.02	185
							IDLE (D)	179	.47	362	157	.06	128
							IDLE (N)	145	.54	78	105	.10	37
R0286	UNL	OR	NW	8,504	9	04/07/80	52 MPH	98	.29	712	54	.01	382
							25 MPH	123	.30	532	63	.01	251
							IDLE (D)	179	.33	422	135	.04	230
							IDLE (N)	129	.47	78	83	.06	53

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0293	UNL	OR	NW	9,369	52	04/30/80	52 MPH	89	.33	602	39	.01	351
							25 MPH	101	.33	341	48	.01	169
							IDLE (D)	166	.94	226	163	.47	131
							IDLE (N)	176	.58	70	154	.07	42
R0297	UNL	OR	OR	9,543	4	05/13/80	52 MPH	92	.33	592	30	.02	213
							25 MPH	111	.40	321	30	.01	117
							IDLE (D)	173	.46	241	141	.13	64
							IDLE (N)	154	.70	66	111	.19	23
R0299	UNL	BP	OR	9,600	0	05/19/80	52 MPH				89	.34	689
							25 MPH				114	.43	362
							IDLE (D)				166	.50	251
							IDLE (N)				225	.99	66
R0300	UNL	BP	NW	9,634	0	05/20/80	52 MPH				89	.31	689
							25 MPH				111	.34	341
							IDLE (D)				176	.89	224
							IDLE (N)				173	.70	71
R0303	UNL	RE	OR	9,735	16	05/28/80	52 MPH	80	.36	652	2	.01	58
							25 MPH	114	.43	341	0	.01	50
							IDLE (D)	160	.54	261	36	.10	6
							IDLE (N)	163	.70	68	21	.14	1
R0306	UNL	RE	NW	9,846	0	06/02/80	52 MPH	86	.30	632	3	.01	70
							25 MPH	111	.34	382	0	.01	20
							IDLE (D)	160	.36	281	3	.02	10
							IDLE (N)	151	.50	69	0	.02	4

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0039	UNL	OR	OR	5,795	0	07/25/79	52 MPH				61	.02	386
							25 MPH				59	.01	281
							IDLE (D)				57	.01	16
							IDLE (N)				56	.01	0
D0044	UNL	OR	OR	5,831	0	07/27/79	52 MPH				54	.01	1453
							25 MPH				53	.01	1065
							IDLE (D)				52	.00	54
							IDLE (N)				51	.01	42
D0055	UNL	OR	OR	5,907	0	08/09/79	52 MPH				-	-	-
							25 MPH				47	.01	219
							IDLE (D)				47	.01	15
							IDLE (N)				46	.01	1
D0067	UNL	BP	OR	6,002	5	08/16/79	52 MPH				102	.77	2329
							25 MPH				112	.73	1325
							IDLE (D)				77	.51	70
							IDLE (N)				96	.59	60
D0078	UNL	BP	OR	6,075	0	08/30/79	52 MPH				-	-	-
							25 MPH				113	.67	1174
							IDLE (D)				83	.51	60
							IDLE (N)				89	.57	50
D0080	UNL	BP	OR	6,101	0	08/31/79	52 MPH				-	-	-
							25 MPH				113	.63	498
							IDLE (D)				80	.46	24
							IDLE (N)				99	.60	21
D0091	LEAD	OR	OR	6,371	26	09/12/79	52 MPH				-	-	-
							25 MPH				77	.08	23
							IDLE (D)				70	.07	0
							IDLE (N)				75	.11	0
D0096	LEAD	OR	OR	6,597	13	09/17/79	52 MPH				-	-	-
							25 MPH				113	.10	49
							IDLE (D)				99	.08	5
							IDLE (N)				99	.17	4
D0099	LEAD	OR	OR	6,853	12	09/24/79	52 MPH				78	.05	699
							25 MPH				96	.13	70
							IDLE (D)				71	.10	1
							IDLE (N)				71	.27	1

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0106	LEAD	OR	OR	7,036	13	10/04/79	52 MPH				98	.06	764
							25 MPH				124	.14	106
							IDLE (D)				96	.17	3
							IDLE (N)				88	.23	1
D0120	LEAD	OR	OR	7,275	14	10/27/79	52 MPH				59	.06	1083
							25 MPH				81	.09	153
							IDLE (D)				46	.13	9
							IDLE (N)				42	.15	6
D0134	LEAD	OR	OR	7,516	12	11/21/79	52 MPH				33	.12	610
							25 MPH				37	.11	126
							IDLE (D)				36	.15	10
							IDLE (N)				62	.13	7
D0138	LEAD	OR	OR	7,641	13	12/04/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				34	.21	19
							IDLE (N)				40	.16	12
D0143	LEAD	OR	OR	7,934	17	12/11/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				20	.16	18
							IDLE (N)				21	.17	14
D0150	LEAD	OR	OR	8,144	3	01/14/80	52 MPH	79	.80	2382	80	.17	1365
							25 MPH	110	.87	1245	107	.33	542
							IDLE (D)	53	.67	83	52	.29	37
							IDLE (N)	59	.67	67	56	.21	18
D0153	LEAD	OR	OR	8,174	4	01/15/80	52 MPH	67	.82	2253	61	.18	1343
							25 MPH	91	.89	1200	86	.29	702
							IDLE (D)	35	.67	77	35	.25	44
							IDLE (N)	38	.65	64	29	.18	25
R0175	LEAD	BP	OR	8,220	4	01/26/80	52 MPH				80	.99	2382
							25 MPH				100	1.06	1397
							IDLE (D)				40	.82	80
							IDLE (N)				35	.80	67
R0179	LEAD	BP	OR	8,250	0	01/28/80	52 MPH				76	1.04	2382
							25 MPH				97	1.01	1430
							IDLE (D)				41	.82	77
							IDLE (N)				44	.82	63

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0183	UNL	BP	OR	8,280	14	01/29/80	52 MPH				70	.99	2382
							25 MPH				83	1.04	1365
							IDLE (D)				38	.80	74
							IDLE (N)				37	.82	58
R0185	UNL	BP	OR	8,309	0	01/30/80	52 MPH				74	.99	2382
							25 MPH				89	1.02	1343
							IDLE (D)				38	.80	74
							IDLE (N)				46	.82	62
R0193	UNL	BP	NW	8,339	0	02/04/80	52 MPH				70	1.04	2382
							25 MPH				88	1.04	547
							IDLE (D)				41	.74	70
							IDLE (N)				74	.87	60
R0198	UNL	BP	NW	8,380	0	02/06/80	52 MPH				76	1.14	2382
							25 MPH				89	1.14	1245
							IDLE (D)				41	.96	69
							IDLE (N)				74	1.06	60
R0202	UNL	OR	NW	8,406	0	02/08/80	52 MPH	65	1.06	2382	64	.54	1658
							25 MPH	85	1.14	1289	85	.63	1077
							IDLE (D)	46	.92	72	47	.34	54
							IDLE (N)	80	1.01	60	68	.26	29
R0207	UNL	OR	OR	8,445	0	02/09/80	52 MPH	64	.89	2382	59	.15	1669
							25 MPH	88	.99	1321	83	.33	770
							IDLE (D)	41	.87	72	40	.27	38
							IDLE (N)	50	.87	60	46	.15	20
R0213	UNL	OR	OR	8,730	30	02/14/80	52 MPH	80	.86	2104	64	.12	1419
							25 MPH	86	.96	1100	79	.15	562
							IDLE (D)	52	.75	70	46	.02	44
							IDLE (N)	95	.84	56	123	.02	48
R0215	UNL	OR	NW	8,760	0	02/15/80	52 MPH	73	.99	2040	70	.50	1397
							25 MPH	83	1.07	1020	83	.54	808
							IDLE (D)	49	.77	70	49	.04	29
							IDLE (N)	86	.89	56	89	.06	23
R0218	UNL	OR	OR	8,927	15	02/18/80	52 MPH	73	.94	2170	64	.17	1484
							25 MPH	86	.96	1222	83	.24	833
							IDLE (D)	54	.84	75	51	.30	43
							IDLE (N)	51	.84	58	54	.22	30

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0221	UNL	OR	NW	8,958	0	02/19/80	52 MPH	74	1.07	2028	65	.45	1419
							25 MPH	89	1.09	1088	79	.45	773
							IDLE (D)	51	.77	73	42	.16	41
							IDLE (N)	60	.89	57	49	.16	30
R0225	UNL	OR	OR	9,164	30	02/21/80	52 MPH	70	.91	2197	58	.10	1419
							25 MPH	83	.99	1100	77	.22	632
							IDLE (D)	45	.82	69	45	.26	39
							IDLE (N)	40	.84	57	45	.18	25
R0227	UNL	OR	NW	9,212	0	02/23/80	52 MPH	77	1.04	2078	71	.41	1549
							25 MPH	92	1.09	1122	89	.47	873
							IDLE (D)	51	.73	69	48	.06	36
							IDLE (N)	83	.82	56	77	.06	19
R0236	UNL	OR	OR	9,503	20	02/26/80	52 MPH	76	.94	2267	68	.19	1441
							25 MPH	85	.96	1043	86	.27	712
							IDLE (D)	57	.79	69	57	.16	36
							IDLE (N)	123	.89	55	132	.03	25
R0238	UNL	OR	NW	9,532	0	02/27/80	52 MPH	74	.99	2130	71	.39	1343
							25 MPH	89	.99	1088	83	.30	692
							IDLE (D)	51	.66	70	45	.01	62
							IDLE (N)	74	.77	56	63	.01	50
R0255	UNL	OR	OR	10,562	65	03/10/80	52 MPH	68	.86	2382	63	.13	1549
							25 MPH	86	.94	1267	80	.24	770
							IDLE (D)	42	.75	81	40	.20	41
							IDLE (N)	68	.84	65	63	.11	24
R0259	UNL	OR	NW	10,610	5	03/11/80	52 MPH	63	1.01	2382	61	.48	1735
							25 MPH	80	1.04	1289	79	.43	974
							IDLE (D)	39	.77	83	39	.11	47
							IDLE (N)	68	.84	66	65	.04	30
R0265	UNL	OR	OR	11,642	56	03/17/80	52 MPH	64	.84	2211	54	.07	1441
							25 MPH	83	.89	1156	77	.12	542
							IDLE (D)	51	.70	73	49	.03	24
							IDLE (N)	63	.82	57	57	.02	43
R0268	UNL	OR	NW	11,672	0	03/18/80	52 MPH	65	.94	2239	63	.39	1419
							25 MPH	85	.94	1133	80	.33	722
							IDLE (D)	51	.68	74	45	.01	48
							IDLE (N)	54	.75	63	51	.01	43

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0271	UNL	BP	OR	11,701	0	03/20/80	52 MPH				71	.89	2211
							25 MPH				83	.89	1043
							IDLE (D)				54	.75	70
							IDLE (N)				57	.79	57
R0273	UNL	BP	NW	11,728	0	03/21/80	52 MPH				74	.99	2157
							25 MPH				85	.94	1133
							IDLE (D)				48	.70	69
							IDLE (N)				71	.79	57
R0275	UNL	RE	OR	11,753	0	03/25/80	52 MPH	63	.84	2184	2	.06	14
							25 MPH	83	.84	1178	12	.12	6
							IDLE (D)	45	.66	67	15	.12	0
							IDLE (N)	54	.79	56	18	.18	0
R0279	UNL	RE	NW	11,847	14	03/27/80	52 MPH	65	.96	2296	21	.31	17
							25 MPH	86	1.04	1200	39	.44	7
							IDLE (D)	45	.75	68	27	.21	1
							IDLE (N)	45	.79	57	24	.26	0

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0043	UNL	OR	OR	5,182	0	07/27/79	52 MPH				51	.01	287
							25 MPH				49	.02	13
							IDLE (D)				47	.03	8
							IDLE (N)				45	.00	2
D0056	UNL	OR	OR	5,271	0	08/09/79	52 MPH				55	.02	150
							25 MPH				54	.03	18
							IDLE (D)				51	.04	5
							IDLE (N)				50	.01	3
D0060	UNL	OR	OR	5,299	0	08/13/79	52 MPH				55	.02	253
							25 MPH				54	.02	57
							IDLE (D)				53	.02	8
							IDLE (N)				52	.01	19
D0064	UNL	BP	OR	5,330	0	08/14/79	52 MPH				-	-	-
							25 MPH				145	.43	2217
							IDLE (D)				157	.52	337
							IDLE (N)				121	.60	106
D0075	UNL	BP	OR	5,384	0	08/27/79	52 MPH				-	-	-
							25 MPH				149	.44	1918
							IDLE (D)				166	.48	304
							IDLE (N)				131	.58	95
D0076	UNL	BP	OR	5,408	0	08/29/79	52 MPH				-	-	-
							25 MPH				103	.45	899
							IDLE (D)				150	.50	284
							IDLE (N)				118	.56	91
D0097	LEAD	OR	OR	5,646	14	09/18/79	52 MPH				-	-	-
							25 MPH				94	.15	35
							IDLE (D)				83	.08	16
							IDLE (N)				78	.04	19
D0105	LEAD	OR	OR	5,870	26	10/03/79	52 MPH				86	.06	672
							25 MPH				90	.19	106
							IDLE (D)				79	.19	20
							IDLE (N)				65	.06	26
D0112	LEAD	OR	OR	6,121	12	10/12/79	52 MPH				107	.09	412
							25 MPH				105	.19	120
							IDLE (D)				101	.19	22
							IDLE (N)				77	.06	23

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0131	LEAD	OR	OR	6,341	15	11/13/79	52 MPH				58	.10	469
							25 MPH				61	.19	131
							IDLE (D)				54	.18	24
							IDLE (N)				24	.09	33
D0137	LEAD	OR	OR	6,606	13	12/03/79	52 MPH				41	.07	940
							25 MPH				47	.18	216
							IDLE (D)				28	.18	49
							IDLE (N)				6	.06	49
D0145	LEAD	OR	OR	6,831	14	12/15/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				47	.16	47
							IDLE (N)				5	.03	55
D0147	LEAD	OR	OR	7,004	0	12/27/79	52 MPH				-	-	-
							25 MPH				-	-	-
							IDLE (D)				40	.05	63
							IDLE (N)				10	.03	55
D0149	LEAD	OR	OR	7,024	0	01/14/80	52 MPH	103	.58	1178	82	.09	242
							25 MPH	142	.58	1020	82	.13	241
							IDLE (D)	171	.49	286	59	.03	75
							IDLE (N)	109	.50	94	44	.03	53
D0152	LEAD	OR	OR	7,057	3	01/15/80	52 MPH	83	.56	1156	62	.07	286
							25 MPH	125	.58	1020	65	.12	261
							IDLE (D)	160	.50	200	47	.04	117
							IDLE (N)	85	.50	93	34	.03	48
D0167	LEAD	OR	OR	7,369	28	01/22/80	52 MPH	85	.67	1527	52	.07	622
							25 MPH	134	.65	1430	71	.16	452
							IDLE (D)	172	.89	397	67	.05	104
							IDLE (N)	94	.52	95	41	.04	46
D0170	LEAD	OR	OR	7,589	4	01/24/80	52 MPH	94	.65	1658	64	.08	562
							25 MPH	142	.72	1495	85	.18	492
							IDLE (D)	178	.92	387	180	.82	94
							IDLE (N)	94	.62	116	46	.04	8
D0188	LEAD	OR	OR	7,959	31	01/31/80	52 MPH	79	.50	1570	58	.08	974
							25 MPH	128	.74	2211	71	.20	761
							IDLE (D)	154	.69	362	56	.04	136
							IDLE (N)	77	.52	108	29	.04	51

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0195	LEAD	BP	OR	8,006	0	02/05/80	52 MPH				83	.50	1222
							25 MPH				130	.65	2091
							IDLE (D)				134	.50	316
							IDLE (N)				73	.58	91
R0197	LEAD	BP	OR	8,034	0	02/06/80	52 MPH				83	.50	1178
							25 MPH				134	.65	2028
							IDLE (D)				143	.50	301
							IDLE (N)				74	.52	89
R0201	UNL	BP	OR	8,062	17	02/07/80	52 MPH				86	.58	1156
							25 MPH				131	.78	1978
							IDLE (D)				83	.87	492
							IDLE (N)				83	.87	81
R0203	UNL	BP	OR	8,090	0	02/08/80	52 MPH				71	.54	1111
							25 MPH				119	.69	1942
							IDLE (D)				134	.80	291
							IDLE (N)				73	.85	85
R0214	UNL	BP	NW	8,125	0	02/15/80	52 MPH				92	.62	909
							25 MPH				131	.58	1746
							IDLE (D)				148	.54	223
							IDLE (N)				88	.66	86
R0217	UNL	BP	NW	8,155	0	02/18/80	52 MPH				91	.62	974
							25 MPH				129	.62	1769
							IDLE (D)				148	.58	230
							IDLE (N)				88	.73	87
R0220	UNL	OR	NW	8,183	0	02/19/80	52 MPH	88	.58	1267	57	.04	532
							25 MPH	135	.66	1310	80	.07	341
							IDLE (D)	149	.62	311	80	.03	25
							IDLE (N)	86	.70	94	36	.04	16
R0223	UNL	OR	OR	8,215	12	02/20/80	52 MPH	83	.47	1267	55	.05	837
							25 MPH	138	.73	1200	92	.19	261
							IDLE (D)	157	.84	251	80	.19	49
							IDLE (N)	94	.79	89	30	.04	21
R0229	UNL	OR	OR	8,513	15	02/23/80	52 MPH	92	.56	1222	54	.03	351
							25 MPH	141	.75	1031	92	.24	261
							IDLE (D)	169	.94	241	98	.36	34
							IDLE (N)	105	1.09	85	48	.28	20

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0234	UNL	OR	NW	8,550	0	02/26/80	52 MPH	89	.54	1200	57	.04	722
							25 MPH	137	.66	1066	77	.06	241
							IDLE (D)	157	.62	261	74	.02	21
							IDLE (N)	97	.75	85	30	.01	18
R0239	UNL	OR	OR	8,763	14	02/28/80	52 MPH	86	.54	1222	51	.03	452
							25 MPH	146	.75	1020	105	.24	261
							IDLE (D)	173	.94	230	98	.28	37
							IDLE (N)	105	.94	82	48	.18	17
R0242	UNL	OR	NW	8,794	0	02/29/80	52 MPH	80	.47	1133	45	.03	522
							25 MPH	128	.62	1043	74	.05	251
							IDLE (D)	141	.54	241	77	.02	23
							IDLE (N)	89	.64	84	28	.01	18
R0250	UNL	OR	OR	9,002	14	03/06/80	52 MPH	79	.35	1549	48	.04	1419
							25 MPH	135	.70	1376	89	.21	281
							IDLE (D)	160	1.04	316	83	.43	52
							IDLE (N)	105	1.04	97	48	.36	21
R0258	UNL	OR	NW	9,039	0	03/11/80	52 MPH	74	.39	1506	45	.04	1289
							25 MPH	126	.62	1354	68	.05	261
							IDLE (D)	151	.70	326	74	.08	32
							IDLE (N)	89	.75	102	23	.02	21
R0262	UNL	OR	OR	9,240	14	03/13/80	52 MPH	77	.43	1484	45	.04	1245
							25 MPH	126	.75	1245	89	.25	271
							IDLE (D)	163	1.04	291	98	.43	41
							IDLE (N)	105	1.04	94	54	.33	18
R0263	UNL	OR	NW	9,277	0	03/14/80	52 MPH	77	.58	1222	45	.03	392
							25 MPH	128	.62	1043	77	.08	193
							IDLE (D)	157	.62	251	80	.05	24
							IDLE (N)	94	.70	84	33	.02	15
R0267	UNL	OR	OR	10,305	52	03/18/80	52 MPH	70	.37	1077	40	.04	974
							25 MPH	135	.70	1066	105	.21	182
							IDLE (D)	160	.84	226	95	.24	34
							IDLE (N)	101	.84	87	45	.12	15
R0270	UNL	OR	NW	10,335	0	03/19/80	52 MPH	80	.43	1200	45	.03	785
							25 MPH	135	.62	997	80	.10	174
							IDLE (D)	151	.62	230	86	.03	17
							IDLE (N)	98	.70	87	33	.02	13

APPENDIX E (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF FEDERAL THREE MODE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	MODE	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0274	UNL	OR	OR	11,365	57	03/24/80	52 MPH	74	.50	1245	39	.03	780
							25 MPH	134	.70	1111	89	.21	220
							IDLE (D)	148	.66	236	68	.07	27
							IDLE (N)	95	.73	87	33	.05	13
R0276	UNL	OR	NW	11,392	0	03/25/80	52 MPH	71	.36	1245	42	.03	1066
							25 MPH	129	.62	1133	68	.06	185
							IDLE (D)	148	.62	241	77	.04	16
							IDLE (N)	94	.70	83	18	.01	20
R0281	UNL	BP	OR	11,422	0	03/31/80	52 MPH				74	.50	927
							25 MPH				121	.70	1814
							IDLE (D)				151	.75	210
							IDLE (N)				89	.79	86
R0283	UNL	BP	NW	11,450	0	04/01/80	52 MPH				80	.54	761
							25 MPH				129	.62	1724
							IDLE (D)				146	.58	230
							IDLE (N)				89	.70	83
R0287	UNL	RE	OR	11,482	10	04/15/80	52 MPH	71	.54	1066	1	.12	10
							25 MPH	123	.70	1088	0	.13	5
							IDLE (D)	148	.62	222	0	.09	1
							IDLE (N)	98	.75	80	0	.04	0
R0288	UNL	RE	NW	11,514	0	04/16/80	52 MPH	68	.50	1043	2	.01	251
							25 MPH	126	.62	1066	3	.10	8
							IDLE (D)	148	.54	251	12	.11	2
							IDLE (N)	95	.66	84	2	.03	1

CATALYST DETERIORATION/REJUVENATION

APPENDIX F - LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

SPEED - Engine speed

2500RPM - Reading taken with engine at 2500 RPM, transmission in neutral
IDLE(N) - Readings taken with engine at normal idle, transmission in neutral

BEFORE - Emission readings taken before the catalytic converter

AFTER - Emission readings taken after the catalytic converter

HC - Unburned hydrocarbon emissions in ppm hexane
CO - Carbon monoxide emissions in mole percent
NO - Oxides of nitrogen emissions in ppm

APPENDIX F

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0001	UNL	OR	NA	8,316	0	05/16/79	2500 RPM				99	.02	138
							IDLE (N)				59	.02	90
D0003	UNL	OR	NA	8,394	0	05/21/79	2500 RPM				42	.01	140
							IDLE (N)				11	.01	100
D0005	UNL	OR	NA	8,442	8	05/23/79	2500 RPM				93	.01	139
							IDLE (N)				60	.01	93
D0008	UNL	BP	NA	8,694	5	06/05/79	2500 RPM				684	.20	80
							IDLE (N)				417	.40	46
D0010	UNL	BP	NA	8,733	0	06/12/79	2500 RPM				505	.21	88
							IDLE (N)				332	.50	53
D0013	UNL	BP	NA	8,760	6	06/14/79	2500 RPM				488	.23	81
							IDLE (N)				338	.42	44
D0034	LEAD	OR	NA	9,046	40	07/11/79	2500 RPM				475	.14	114
							IDLE (N)				343	.04	61
D0038	LEAD	OR	NA	9,307	15	07/24/79	2500 RPM				479	.19	107
							IDLE (N)				294	.10	53
D0072	LEAD	OR	NA	9,770	41	08/25/79	2500 RPM				624	.17	104
							IDLE (N)				395	.11	55
D0093	LEAD	OR	NA	10,069	20	09/13/79	2500 RPM				705	.19	96
							IDLE (N)				374	.21	37
D0109	UNL	BP	NA	10,446	72	10/10/79	2500 RPM				736	.23	97
							IDLE (N)				425	.32	52
D0118	UNL	RE	NA	10,532	0	10/24/79	2500 RPM				23	.03	145
							IDLE (N)				11	.03	86
R0154	LEAD	OR	NA	11,750	91	01/16/80	2500 RPM	619	.27	104	598	.23	121
							IDLE (N)	434	.82	51	505	.82	56
R0157	LEAD	OR	NA	11,795	3	01/17/80	2500 RPM	682	.26	97	724	.19	121
							IDLE (N)	434	.52	47	598	.49	61
R0165	LEAD	OR	NA	11,831	6	01/22/80	2500 RPM	546	.26	111	598	.21	139
							IDLE (N)	474	.42	48	651	.32	61

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651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0173	UNL	BP	NA	11,877	22	01/25/80	2500 RPM				703	.27	121
							IDLE (N)				474	1.28	51
R0178	UNL	OR	NA	11,909	0	01/28/80	2500 RPM	661	.27	85	640	.09	128
							IDLE (N)	672	.78	47	703	.11	58
R0184	UNL	OR	NA	12,118	17	01/30/80	2500 RPM	788	.25	76	735	.09	131
							IDLE (N)	526	1.06	46	505	.38	58
R0189	UNL	OR	NA	12,331	18	02/01/80	2500 RPM	735	.26	74	661	.08	123
							IDLE (N)	495	.78	39	630	.17	58
R0216	UNL	OR	NA	12,612	19	02/15/80	2500 RPM	794	.23	83	785	.07	120
							IDLE (N)	383	.68	28	577	.31	54
R0222	UNL	OR	NA	12,823	20	02/19/80	2500 RPM	813	.24	84	679	.05	97
							IDLE (N)	361	.70	29	383	.23	37
R0232	UNL	OR	NA	13,860	61	02/25/80	2500 RPM	961	.23	90	869	.06	123
							IDLE (N)	225	.84	25	449	1.09	47
R0244	UNL	OR	NA	14,894	65	03/04/80	2500 RPM	679	.23	91	619	.05	124
							IDLE (N)	383	1.09	36	449	.43	51
R0247	UNL	RE	NA	14,934	0	03/05/80	2500 RPM	850	.24	83	48	.01	139
							IDLE (N)	361	.94	26	207	.54	13

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0057	UNL	OR	NA	9,287	0	08/09/79	2500 RPM				95	.01	134
							IDLE (N)				54	.00	110
D0059	UNL	OR	NA	9,319	0	08/13/79	2500 RPM				102	.01	131
							IDLE (N)				51	.01	125
D0077	UNL	OR	NA	9,462	0	08/29/79	2500 RPM				119	.04	130
							IDLE (N)				64	.03	104
D0083	UNL	BP	NA	9,486	0	09/04/79	2500 RPM				855	.20	81
							IDLE (N)				598	.19	70
D0092	UNL	BP	NA	9,567	0	09/13/79	2500 RPM				727	.17	67
							IDLE (N)				452	.19	62
D0095	UNL	BP	NA	9,591	0	09/14/79	2500 RPM				851	.21	79
							IDLE (N)				598	.21	97
D0100	LEAD	OR	NA	9,814	39	09/25/79	2500 RPM				734	.07	89
							IDLE (N)				265	.02	88
D0119	LEAD	OR	NA	10,174	21	10/26/79	2500 RPM				692	.16	99
							IDLE (N)				289	.07	95
D0126	LEAD	OR	NA	10,407	20	11/12/79	2500 RPM				742	.12	148
							IDLE (N)				341	.08	95
D0136	LEAD	OR	NA	10,678	19	12/01/79	2500 RPM				648	.15	132
							IDLE (N)				284	.07	67
D0142	LEAD	OR	NA	10,922	18	12/10/79	2500 RPM				782	.14	136
							IDLE (N)				388	.09	84
D0148	LEAD	OR	NA	11,186	17	01/14/80	2500 RPM	863	.45	98	961	.41	125
							IDLE (N)	598	.26	60	703	.30	72
D0151	LEAD	OR	NA	11,223	0	01/15/80	2500 RPM	852	.19	94	874	.14	123
							IDLE (N)	703	.34	51	874	.14	72
D0163	LEAD	OR	NA	11,256	0	01/21/80	2500 RPM	896	.20	65	1004	.16	144
							IDLE (N)	672	.26	80	746	.12	98
D0169	LEAD	OR	NA	11,593	37	01/24/80	2500 RPM	906	.20	131	831	.21	140
							IDLE (N)	464	.22	73	516	.10	85

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

								BEFCRE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0174	LEAD	OR	NA	11,841	4	01/26/80	2500 RPM	928	.20	121	885	.20	131
							IDLE (N)	598	.18	68	842	.12	98
D0190	UNL	BP	NA	11,876	21	02/01/80	2500 RPM				1026	.21	109
							IDLE (N)				1004	.39	53
R0200	UNL	OR	NA	11,946	0	02/07/80	2500 RPM	1093	.21	89	1148	.08	139
							IDLE (N)	703	.35	55	809	.06	84
R0212	UNL	OR	NA	12,133	19	02/14/80	2500 RPM	1205	.18	90	1205	.07	137
							IDLE (N)	737	.26	44	887	.03	78
R0219	UNL	OR	NA	12,347	19	02/18/80	2500 RPM	1117	.19	97	1037	.08	144
							IDLE (N)	619	.32	50	598	.04	72
R0224	UNL	OR	NA	12,621	20	02/20/80	2500 RPM	1117	.19	94	1149	.06	136
							IDLE (N)	577	.25	62	608	.02	90
R0230	UNL	OR	NA	12,902	41	02/23/80	2500 RPM	1117	.18	90	1077	.08	131
							IDLE (N)	556	.29	52	577	.03	85
R0243	UNL	OR	NA	13,930	69	02/29/80	2500 RPM	1117	.20	88	1037	.05	125
							IDLE (N)	577	.26	64	598	.02	91
R0246	UNL	OR	NA	14,940	71	03/05/80	2500 RPM	1077	.19	91	1077	.04	139
							IDLE (N)	577	.26	72	577	.01	102
R0252	UNL	RE	NA	14,990	0	03/07/80	2500 RPM	869	.18	117	15	.01	152
							IDLE (N)	383	.24	102	9	.01	104

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0004	UNL	OR	NA	6,818	7	05/22/79	2500 RPM				71	.00	194
							IDLE (N)				63	.00	80
D0006	UNL	OR	NA	6,857	2	05/23/79	2500 RPM				67	.00	172
							IDLE (N)				57	.00	81
D0007	UNL	OR	NA	6,886	0	05/25/79	2500 RPM				67	.02	190
							IDLE (N)				58	.02	86
D0009	UNL	BP	NA	6,950	0	06/08/79	2500 RPM				186	.22	146
							IDLE (N)				198	.13	59
D0011	UNL	BP	NA	7,014	6	06/13/79	2500 RPM				93	.23	231
							IDLE (N)				164	.19	93
D0014	UNL	BP	NA	7,069	0	06/23/79	2500 RPM				159	.20	161
							IDLE (N)				198	.13	74
D0049	LEAD	OR	NA	7,449	28	08/03/79	2500 RPM				183	.10	127
							IDLE (N)				168	.03	50
D0073	LEAD	OR	NA	7,767	27	08/25/79	2500 RPM				193	.12	132
							IDLE (N)				265	.03	45
D0088	LEAD	OR	NA	7,956	12	09/11/79	2500 RPM				195	.13	160
							IDLE (N)				166	.05	57
D0098	LEAD	OR	NA	8,161	13	09/19/79	2500 RPM				224	.14	154
							IDLE (N)				191	.05	60
D0103	LEAD	OR	NA	8,429	14	09/28/79	2500 RPM				207	.12	150
							IDLE (N)				170	.05	54
D0111	LEAD	OR	NA	8,618	12	10/11/79	2500 RPM				235	.14	163
							IDLE (N)				195	.06	64
D0121	LEAD	OR	NA	8,837	13	10/29/79	2500 RPM				235	.13	160
							IDLE (N)				187	.07	55
D0127	LEAD	OR	NA	9,017	13	11/12/79	2500 RPM				140	.16	162
							IDLE (N)				101	.09	59
D0135	LEAD	OR	NA	9,244	14	11/26/79	2500 RPM				192	.13	156
							IDLE (N)				96	.04	56

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0141	LEAD	OR	NA	9,430	12	12/10/79	2500 RPM				182	.14	162
							IDLE (N)				116	.05	61
D0155	LEAD	OR	NA	9,856	19	01/16/80	2500 RPM	112	.22	185	65	.16	187
							IDLE (N)	353	.17	53	273	.07	55
D0158	LEAD	OR	NA	9,889	0	01/17/80	2500 RPM	107	.24	179	82	.14	179
							IDLE (N)	343	.18	50	273	.07	52
D0160	LEAD	OR	NA	9,922	0	01/18/80	2500 RPM	125	.24	173	83	.14	179
							IDLE (N)	454	.18	44	353	.06	48
D0164	UNL	BP	NA	9,961	19	01/21/80	2500 RPM				76	.24	218
							IDLE (N)				293	.19	55
R0168	UNL	OR	NA	9,993	0	01/24/80	2500 RPM	100	.26	195	83	.18	187
							IDLE (N)	303	.19	49	253	.08	51
R0176	UNL	OR	NA	10,220	16	01/26/80	2500 RPM	116	.26	178	86	.14	190
							IDLE (N)	343	.20	49	254	.06	54
R0182	UNL	OR	NA	10,490	16	01/29/80	2500 RPM	97	.27	183	74	.14	195
							IDLE (N)	363	.20	44	313	.05	45
R0187	UNL	OR	NA	10,739	15	01/31/80	2500 RPM	106	.28	171	67	.13	187
							IDLE (N)	413	.20	48	240	.05	50
R0206	UNL	OR	NA	10,931	16	02/09/80	2500 RPM	113	.28	179	77	.12	190
							IDLE (N)	313	.20	44	189	.04	52
R0231	UNL	OR	NA	12,015	62	02/25/80	2500 RPM	182	.27	133	108	.11	160
							IDLE (N)	316	.21	51	182	.02	56
R0245	UNL	OR	NA	13,046	61	03/05/80	2500 RPM	141	.25	147	89	.10	179
							IDLE (N)	339	.19	57	154	.02	65
R0251	UNL	RE	NA	13,114	0	03/07/80	2500 RPM	132	.25	152	36	.01	169
							IDLE (N)	316	.18	51	60	.01	57

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0018	UNL	OR	NA	7,283	0	06/27/79	2500 RPM				69	.00	150
							IDLE (N)				41	.00	61
D0020	UNL	OR	NA	7,315	5	06/28/79	2500 RPM				75	.01	120
							IDLE (N)				49	.01	44
D0022	UNL	OR	NA	7,349	2	06/29/79	2500 RPM				84	.03	119
							IDLE (N)				56	.02	57
D0027	UNL	BP	NA	7,380	0	07/07/79	2500 RPM				251	.27	128
							IDLE (N)				277	.17	46
D0031	UNL	BP	NA	7,437	6	07/10/79	2500 RPM				264	.25	110
							IDLE (N)				278	.14	41
D0033	UNL	BP	NA	7,492	0	07/11/79	2500 RPM				281	.27	123
							IDLE (N)				250	.15	49
D0054	LEAD	OR	NA	7,955	40	08/08/79	2500 RPM				207	.16	134
							IDLE (N)				103	.04	65
D0082	LEAD	OR	NA	8,266	24	08/31/79	2500 RPM				252	.11	84
							IDLE (N)				267	.03	43
D0094	LEAD	OR	NA	8,358	12	09/13/79	2500 RPM				298	.13	71
							IDLE (N)				259	.04	40
D0101	LEAD	OR	NA	8,528	10	09/25/79	2500 RPM				305	.17	101
							IDLE (N)				245	.06	53
D0107	LEAD	OR	NA	8,727	15	10/05/79	2500 RPM				294	.14	105
							IDLE (N)				269	.05	54
D0113	LEAD	OR	NA	8,897	11	10/12/79	2500 RPM				286	.17	105
							IDLE (N)				234	.06	55
D0122	LEAD	OR	NA	9,213	16	10/30/79	2500 RPM				233	.15	108
							IDLE (N)				178	.04	58
D0124	LEAD	OR	NA	9,363	14	11/07/79	2500 RPM				227	.16	108
							IDLE (N)				203	.06	57
D0140	LEAD	OR	NA	9,627	14	12/07/79	2500 RPM				215	.20	122
							IDLE (N)				167	.07	57

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APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0146	LEAD	OR	NA	9,842	12	12/15/79	2500 RPM				236	.16	108
							IDLE (N)				158	.04	53
D0156	LEAD	OR	NA	10,098	9	01/16/80	2500 RPM	221	.31	121	174	.20	127
							IDLE (N)	313	.19	57	243	.07	60
D0159	LEAD	OR	NA	10,134	0	01/17/80	2500 RPM	253	.30	106	201	.18	111
							IDLE (N)	536	.20	44	363	.07	49
D0172	UNL	BP	NA	10,165	18	01/25/80	2500 RPM				203	.30	131
							IDLE (N)				353	.21	56
R0177	UNL	OR	NA	10,199	0	01/26/80	2500 RPM	243	.32	96	201	.19	124
							IDLE (N)	557	.23	39	333	.07	53
R0180	UNL	OR	NA	10,385	16	01/28/80	2500 RPM	241	.31	109	218	.16	120
							IDLE (N)	630	.23	34	373	.05	49
R0186	UNL	OR	NA	10,633	16	01/31/80	2500 RPM	265	.32	112	210	.15	125
							IDLE (N)	578	.23	46	333	.05	55
R0205	UNL	OR	NA	10,864	15	02/09/80	2500 RPM	273	.31	97	220	.14	133
							IDLE (N)	598	.22	43	313	.04	53
R0211	UNL	OR	NA	11,082	16	02/14/80	2500 RPM	272	.28	94	222	.12	113
							IDLE (N)	577	.19	39	361	.02	54
R0233	UNL	OR	NA	12,119	67	02/25/80	2500 RPM	316	.28	88	235	.10	109
							IDLE (N)	577	.21	41	316	.02	58
R0248	UNL	OR	NA	13,149	61	03/06/80	2500 RPM	230	.26	96	163	.08	128
							IDLE (N)	493	.19	47	225	.01	64
R0253	UNL	RE	NA	13,179	0	03/07/80	2500 RPM	236	.27	95	45	.01	123
							IDLE (N)	659	.20	40	30	.01	58

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0021	UNL	OR	OR	4,179	5	06/28/79	2500 RPM				51	.02	106
							IDLE (N)				49	.02	9
D0023	UNL	OR	OR	4,210	0	06/29/79	2500 RPM				59	.01	49
							IDLE (N)				84	.14	11
D0026	UNL	OR	OR	4,282	0	07/05/79	2500 RPM				55	.02	123
							IDLE (N)				54	.02	21
D0028	UNL	BP	OR	4,319	8	07/07/79	2500 RPM				74	.51	414
							IDLE (N)				142	.41	79
D0030	UNL	BP	OR	4,345	0	07/09/79	2500 RPM				76	.69	387
							IDLE (N)				163	.38	77
D0032	UNL	BP	OR	4,373	0	07/10/79	2500 RPM				76	.37	378
							IDLE (N)				156	.38	80
D0065	LEAD	OR	OR	4,731	58	08/15/79	2500 RPM				54	.13	181
							IDLE (N)				172	.60	55
D0081	LEAD	OR	OR	4,902	14	08/31/79	2500 RPM				93	1.36	246
							IDLE (N)				178	1.02	29
D0090	LEAD	OR	OR	5,034	13	09/12/79	2500 RPM				87	.73	283
							IDLE (N)				138	.10	25
D0104	LEAD	OR	OR	5,250	16	09/28/79	2500 RPM				73	.09	270
							IDLE (N)				143	.11	48
D0108	LEAD	OR	OR	5,466	15	10/05/79	2500 RPM				72	.02	246
							IDLE (N)				85	.02	24
D0110	LEAD	OR	OR	5,719	17	10/11/79	2500 RPM				87	.07	270
							IDLE (N)				165	.20	53
D0123	LEAD	OR	OR	5,954	13	10/30/79	2500 RPM				50	.02	252
							IDLE (N)				111	.03	48
D0133	LEAD	OR	OR	6,050	13	11/17/79	2500 RPM				18	.03	278
							IDLE (N)				91	.05	48
D0139	LEAD	OR	OR	6,242	28	12/06/79	2500 RPM				30	.43	245
							IDLE (N)				95	.06	52

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0144	LEAD	OR	OR	6,637	16	12/15/79	2500 RPM				50	.03	323
							IDLE (N)				95	.02	51
D0161	LEAD	OR	OR	6,875	7	01/18/80	2500 RPM	62	.72	462	24	.12	187
							IDLE (N)	168	.76	80	155	.26	48
D0166	LEAD	OR	OR	6,944	4	01/22/80	2500 RPM	61	.99	567	59	1.46	512
							IDLE (N)	184	.87	84	158	.35	55
D0196	LEAD	OR	OR	7,057	17	02/05/80	2500 RPM	32	.54	442	47	1.06	392
							IDLE (N)	171	.96	81	140	.21	75
D0228	LEAD	OR	OR	7,152	5	02/23/80	2500 RPM	42	.70	382	18	.14	238
							IDLE (N)	176	.73	82	174	.33	74
R0235	LEAD	BP	OR	7,184	10	02/26/80	2500 RPM				54	.86	382
							IDLE (N)				173	.68	78
R0237	LEAD	BP	OR	7,213	0	02/27/80	2500 RPM				46	.84	422
							IDLE (N)				163	.66	77
R0240	UNL	BP	OR	7,241	18	02/28/80	2500 RPM				40	.75	412
							IDLE (N)				179	.89	75
R0241	UNL	BP	OR	7,269	0	02/29/80	2500 RPM				34	.50	382
							IDLE (N)				160	.79	74
R0249	UNL	BP	NW	7,302	0	03/06/80	2500 RPM				30	.38	512
							IDLE (N)				151	.47	92
R0254	UNL	BP	NW	7,329	0	03/10/80	2500 RPM				30	.43	452
							IDLE (N)				145	.50	89
R0260	UNL	OR	NW	7,358	0	03/11/80	2500 RPM	27	.39	502	9	.02	291
							IDLE (N)	148	.47	97	117	.05	90
R0261	UNL	OR	OR	7,390	16	03/12/80	2500 RPM	36	.47	462	14	.03	286
							IDLE (N)	169	.70	93	132	.23	84
R0264	UNL	OR	OR	7,629	13	03/14/80	2500 RPM	30	.47	402	12	.02	222
							IDLE (N)	163	.70	82	123	.19	74
R0266	UNL	OR	NW	7,666	0	03/17/80	2500 RPM	30	.37	432	8	.02	234
							IDLE (N)	163	.47	89	117	.06	84

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APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0269	UNL	OR	OR	7,910	20	03/19/80	2500 RPM	27	.40	392	9	.01	210
							IDLE (N)	154	.66	85	126	.26	72
R0272	UNL	OR	NW	7,941	0	03/21/80	2500 RPM	24	.39	402	6	.01	231
							IDLE (N)	148	.47	85	98	.06	81
R0280	UNL	OR	OR	8,144	15	03/28/80	2500 RPM	24	.36	402	6	.02	218
							IDLE (N)	151	.52	85	89	.02	70
R0282	UNL	OR	NW	8,174	0	03/31/80	2500 RPM	24	.38	382	6	.01	213
							IDLE (N)	141	.50	89	117	.04	70
R0285	UNL	OR	OR	8,473	23	04/03/80	2500 RPM	28	.43	362	6	.02	177
							IDLE (N)	145	.58	84	111	.10	29
R0286	UNL	OR	NW	8,504	9	04/07/80	2500 RPM	21	.38	382	6	.01	200
							IDLE (N)	129	.43	89	74	.03	62
R0293	UNL	OR	NW	9,369	52	04/30/80	2500 RPM	21	.43	341	6	.01	179
							IDLE (N)	141	.70	77	108	.13	46
R0297	UNL	OR	OR	9,543	4	05/13/80	2500 RPM	24	.43	321	2	.01	123
							IDLE (N)	145	.75	72	105	.16	24
R0299	UNL	BP	OR	9,600	0	05/19/80	2500 RPM				24	.54	341
							IDLE (N)				162	.70	76
R0300	UNL	BP	NW	9,634	0	05/20/80	2500 RPM				24	.41	331
							IDLE (N)				148	.58	74
R0303	UNL	RE	OR	9,735	16	05/28/80	2500 RPM	27	.45	351	0	.00	68
							IDLE (N)	138	.62	76	24	.13	2
R0306	UNL	RE	NW	9,846	0	06/02/80	2500 RPM	30	.43	321	0	.01	96
							IDLE (N)	151	.58	79	3	.05	2

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0039	UNL	OR	OR	5,795	0	07/25/79	2500 RPM				58	.01	23
							IDLE (N)				51	.01	6
D0044	UNL	OR	OR	5,831	0	07/27/79	2500 RPM				54	.01	94
							IDLE (N)				52	.01	37
D0055	UNL	OR	OR	5,907	0	08/09/79	2500 RPM				46	.01	34
							IDLE (N)				46	.01	8
D0067	UNL	BP	OR	6,002	5	08/16/79	2500 RPM				70	.50	152
							IDLE (N)				91	.51	55
D0078	UNL	BP	OR	6,075	0	08/30/79	2500 RPM				69	.49	121
							IDLE (N)				90	.56	49
D0080	UNL	BP	OR	6,101	0	08/31/79	2500 RPM				61	.50	44
							IDLE (N)				93	.58	19
D0091	LEAD	OR	OR	6,371	26	09/12/79	2500 RPM				67	.03	0
							IDLE (N)				73	.13	0
D0096	LEAD	OR	OR	6,597	13	09/17/79	2500 RPM				91	.02	10
							IDLE (N)				118	.14	5
D0099	LEAD	OR	OR	6,853	12	09/24/79	2500 RPM				62	.08	4
							IDLE (N)				77	.13	0
D0106	LEAD	OR	OR	7,036	13	10/04/79	2500 RPM				70	.11	5
							IDLE (N)				87	.17	0
D0120	LEAD	OR	OR	7,275	14	10/27/79	2500 RPM				18	.04	43
							IDLE (N)				34	.14	5
D0134	LEAD	OR	OR	7,516	12	11/21/79	2500 RPM				13	.12	26
							IDLE (N)				36	.14	5
D0138	LEAD	OR	OR	7,641	13	12/04/79	2500 RPM				28	.05	39
							IDLE (N)				44	.13	8
D0143	LEAD	OR	OR	7,934	17	12/11/79	2500 RPM				3	.05	74
							IDLE (N)				22	.14	11
D0150	LEAD	OR	OR	8,144	3	01/14/80	2500 RPM	27	.63	155	24	.16	48
							IDLE (N)	44	.66	67	52	.21	12

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0153	LEAD	OR	OR	8,174	4	01/15/80	2500 RPM	16	.69	164	15	.18	67
							IDLE (N)	52	.74	64	67	.19	19
R0175	LEAD	BP	OR	8,220	4	01/26/80	2500 RPM				15	.72	162
							IDLE (N)				46	.87	63
R0179	LEAD	BP	OR	8,250	0	01/28/80	2500 RPM				19	.74	151
							IDLE (N)				70	.89	63
R0183	UNL	BP	OR	8,280	14	01/29/80	2500 RPM				18	.74	177
							IDLE (N)				122	.89	58
R0185	UNL	BP	OR	8,309	0	01/30/80	2500 RPM				18	.72	148
							IDLE (N)				86	.87	63
R0193	UNL	BP	NW	8,339	0	02/04/80	2500 RPM				21	.69	152
							IDLE (N)				89	.87	58
R0198	UNL	BP	NW	8,380	0	02/06/80	2500 RPM				21	.78	144
							IDLE (N)				44	.96	58
R0202	UNL	OR	NW	8,406	0	02/08/80	2500 RPM	24	.82	152	15	.32	92
							IDLE (N)	155	1.06	59	119	.28	24
R0207	UNL	OR	OR	8,445	0	02/09/80	2500 RPM	22	.78	155	24	.16	88
							IDLE (N)	186	.99	58	204	.06	35
R0213	UNL	OR	OR	8,730	30	02/14/80	2500 RPM	45	.70	117	30	.12	60
							IDLE (N)	141	.82	56	203	.01	47
R0215	UNL	OR	NW	8,760	0	02/15/80	2500 RPM	27	.70	131	21	.24	77
							IDLE (N)	57	.79	57	48	.09	21
R0218	UNL	OR	OR	8,927	15	02/18/80	2500 RPM	24	.79	140	30	.17	88
							IDLE (N)	60	.82	57	45	.17	27
R0221	UNL	OR	NW	8,958	0	02/19/80	2500 RPM	42	.79	135	33	.25	87
							IDLE (N)	77	.91	56	68	.20	27
R0225	UNL	OR	OR	9,164	30	02/21/80	2500 RPM	39	.79	140	37	.16	82
							IDLE (N)	60	.84	56	74	.10	23
R0227	UNL	OR	NW	9,212	0	02/23/80	2500 RPM	33	.79	131	21	.25	89
							IDLE (N)	54	.84	55	54	.16	25

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0236	UNL	OR	OR	9,503	20	02/26/80	2500 RPM	45	.84	261	77	.13	158
							IDLE (N)	101	.84	57	135	.02	34
R0238	UNL	OR	NW	9,532	0	02/27/80	2500 RPM	36	.75	141	36	.13	61
							IDLE (N)	68	.79	53	89	.01	48
R0255	UNL	OR	OR	10,562	65	03/10/80	2500 RPM	27	.75	151	30	.14	82
							IDLE (N)	83	.79	64	63	.08	23
R0259	UNL	OR	NW	10,610	5	03/11/80	2500 RPM	24	.77	155	21	.23	94
							IDLE (N)	60	.84	65	51	.11	26
R0265	UNL	OR	OR	11,642	56	03/17/80	2500 RPM	24	.70	139	21	.08	60
							IDLE (N)	48	.79	58	71	.02	39
R0268	UNL	OR	NW	11,672	0	03/18/80	2500 RPM	23	.70	141	18	.22	69
							IDLE (N)	48	.75	57	48	.03	21
R0271	UNL	BP	OR	11,701	0	03/20/80	2500 RPM				33	.70	139
							IDLE (N)				57	.84	57
R0273	UNL	BP	NW	11,728	0	03/21/80	2500 RPM				21	.70	141
							IDLE (N)				54	.79	55
R0275	UNL	RE	OR	11,753	0	03/25/80	2500 RPM	24	.66	133	2	.03	1
							IDLE (N)	48	.70	57	9	.05	1
R0279	UNL	RE	NW	11,847	14	03/27/80	2500 RPM	27	.70	141	6	.24	1
							IDLE (N)	57	.84	57	27	.25	1

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0043	UNL	OR	OR	5,182	0	07/27/79	2500 RPM				50	.01	52
							IDLE (N)				48	.01	10
D0056	UNL	OR	OR	5,271	0	08/09/79	2500 RPM				51	.01	31
							IDLE (N)				49	.01	6
D0060	UNL	OR	OR	5,299	0	08/13/79	2500 RPM				46	.01	56
							IDLE (N)				44	.03	7
D0064	UNL	BP	OR	5,330	0	08/14/79	2500 RPM				74	.59	412
							IDLE (N)				100	.58	100
D0075	UNL	BP	OR	5,384	0	08/27/79	2500 RPM				94	.60	343
							IDLE (N)				123	.59	92
D0076	UNL	BP	OR	5,408	0	08/29/79	2500 RPM				69	.46	98
							IDLE (N)				113	.57	91
D0097	LEAD	OR	OR	5,646	14	09/18/79	2500 RPM				92	.04	42
							IDLE (N)				84	.05	17
D0105	LEAD	OR	OR	5,870	26	10/03/79	2500 RPM				71	.05	69
							IDLE (N)				65	.05	23
D0112	LEAD	OR	OR	6,121	12	10/12/79	2500 RPM				81	.06	119
							IDLE (N)				79	.06	37
D0131	LEAD	OR	OR	6,341	15	11/13/79	2500 RPM				30	.08	132
							IDLE (N)				29	.07	29
D0137	LEAD	OR	OR	6,606	13	12/03/79	2500 RPM				24	.09	119
							IDLE (N)				22	.06	43
D0145	LEAD	OR	OR	6,831	14	12/15/79	2500 RPM				23	.05	152
							IDLE (N)				14	.08	35
D0147	LEAD	OR	OR	7,004	0	12/27/79	2500 RPM				13	.06	169
							IDLE (N)				11	.04	37
D0149	LEAD	OR	OR	7,024	0	01/14/80	2500 RPM	80	.62	362	43	.94	80
							IDLE (N)	104	.54	94	47	.03	42
D0152	LEAD	OR	OR	7,057	3	01/15/80	2500 RPM	44	.58	372	22	.07	79
							IDLE (N)	89	.65	94	29	.05	41

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0167	LEAD	OR	OR	7,369	28	01/22/80	2500 RPM	47	.74	512	24	.12	117
							IDLE (N)	95	.62	117	35	.04	34
D0170	LEAD	OR	OR	7,589	4	01/24/80	2500 RPM	67	.82	472	32	.14	117
							IDLE (N)	94	.62	120	35	.04	17
D0188	LEAD	OR	OR	7,959	31	01/31/80	2500 RPM	50	.82	442	24	.17	109
							IDLE (N)	77	.62	115	25	.04	51
R0195	LEAD	BP	OR	8,006	0	02/05/80	2500 RPM				47	.80	442
							IDLE (N)				74	.62	87
R0197	LEAD	BP	OR	8,034	0	02/06/80	2500 RPM				43	.78	412
							IDLE (N)				74	.60	84
R0201	UNL	BP	OR	8,062	17	02/07/80	2500 RPM				50	.89	392
							IDLE (N)				86	.87	81
R0203	UNL	BP	OR	8,090	0	02/08/80	2500 RPM				38	.80	392
							IDLE (N)				73	.92	81
R0214	UNL	BP	NW	8,125	0	02/15/80	2500 RPM				45	.75	316
							IDLE (N)				79	.66	82
R0217	UNL	BP	NW	8,155	0	02/18/80	2500 RPM				49	.75	346
							IDLE (N)				82	.70	83
R0220	UNL	OR	NW	8,183	0	02/19/80	2500 RPM	54	.73	357	24	.03	91
							IDLE (N)	82	.82	95	39	.05	13
R0223	UNL	OR	OR	8,215	12	02/20/80	2500 RPM	49	.75	321	30	.08	61
							IDLE (N)	86	.94	88	36	.14	25
R0229	UNL	OR	OR	8,513	15	02/23/80	2500 RPM	80	.94	316	55	.29	57
							IDLE (N)	108	1.15	81	64	.56	16
R0234	UNL	OR	NW	8,550	0	02/26/80	2500 RPM	65	.70	316	30	.02	60
							IDLE (N)	92	.75	88	37	.02	13
R0239	UNL	OR	OR	8,763	14	02/28/80	2500 RPM	64	.86	311	45	.21	53
							IDLE (N)	105	1.09	84	54	.35	15
R0242	UNL	OR	NW	8,794	0	02/29/80	2500 RPM	48	.70	301	20	.02	64
							IDLE (N)	88	.79	90	30	.03	14

APPENDIX F (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF TWO SPEED IDLE EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0250	UNL	OR	OR	9,002	14	03/06/80	2500 RPM	74	.94	382	42	.19	64
							IDLE (N)	92	1.15	102	51	.48	18
R0258	UNL	OR	NW	9,039	0	03/11/80	2500 RPM	55	.70	392	21	.02	71
							IDLE (N)	83	.77	104	24	.02	17
R0262	UNL	OR	OR	9,240	14	03/13/80	2500 RPM	61	.94	341	39	.28	58
							IDLE (N)	95	1.15	99	54	.38	15
R0263	UNL	OR	NW	9,277	0	03/14/80	2500 RPM	48	.73	321	18	.02	63
							IDLE (N)	89	.75	89	33	.04	10
R0267	UNL	OR	OR	10,305	52	03/18/80	2500 RPM	54	.79	301	39	.17	40
							IDLE (N)	89	.94	89	51	.22	12
R0270	UNL	OR	NW	10,335	0	03/19/80	2500 RPM	57	.70	311	21	.02	56
							IDLE (N)	89	.75	89	36	.03	9
R0274	UNL	OR	OR	11,365	57	03/24/80	2500 RPM	54	.79	301	27	.11	41
							IDLE (N)	89	.84	90	48	.08	8
R0276	UNL	OR	NW	11,392	0	03/25/80	2500 RPM	48	.66	306	18	.02	53
							IDLE (N)	80	.70	88	30	.03	10
R0281	UNL	BP	OR	11,422	0	03/31/80	2500 RPM				48	.79	311
							IDLE (N)				86	.89	84
R0283	UNL	BP	NW	11,450	0	04/01/80	2500 RPM				48	.70	301
							IDLE (N)				86	.75	83
R0287	UNL	RE	OR	11,482	10	04/15/80	2500 RPM	51	.79	291	2	.04	1
							IDLE (N)	95	.79	85	2	.07	1
R0288	UNL	RE	NW	11,514	0	04/16/80	2500 RPM	48	.66	291	2	.02	4
							IDLE (N)	86	.70	86	2	.02	1

CATALYST DETERIORATION/REJUVENATION

APPENDIX G - LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

SPEED - Vehicle speed

IDLE(D) - Vehicle at idle, transmission in drive
50 MPH - Vehicle at 50 miles per hour

BEFORE - Emission readings taken before the catalytic converter

AFTER - Emission readings taken after the catalytic converter

HC - Unburned hydrocarbon emissions in ppm hexane
CO - Carbon monoxide emissions in mole percent
NO - Oxides of nitrogen emissions in ppm

APPENDIX G

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0001	UNL	OR	NA	8,316	0	05/16/79	IDLE (D)	358	.35	93	116	.03	70
							50 MPH	184	.12	430	99	.02	403
D0003	UNL	OR	NA	8,394	C	05/21/79	IDLE (D)	235	.66	183	38	.03	118
							50 MPH	127	.13	448	37	.02	426
D0005	UNL	OR	NA	8,442	8	05/23/79	IDLE (D)	387	.25	190	107	.00	124
							50 MPH	196	.12	424	83	.01	407
D0008	UNL	BP	NA	8,694	5	06/05/79	IDLE (D)				618	.37	47
							50 MPH				219	.11	478
D0010	UNL	BP	NA	8,733	0	06/12/79	IDLE (D)				453	.51	39
							50 MPH				169	.08	361
D0013	UNL	BP	NA	8,760	6	06/14/79	IDLE (D)				258	.22	88
							50 MPH				167	.08	359
D0034	LEAD	OR	NA	9,046	40	07/11/79	IDLE (D)	675	.22	44	492	.05	50
							50 MPH	168	.15	329	154	.13	367
D0038	LEAD	OR	NA	9,307	15	07/24/79	IDLE (D)	250	.15	85	232	.16	85
							50 MPH	168	.13	308	157	.13	302
D0072	LEAD	OR	NA	9,770	41	08/25/79	IDLE (D)	272	.37	71	267	.42	66
							50 MPH	218	.11	257	193	.09	280
D0093	LEAD	OR	NA	10,069	20	09/13/79	IDLE (D)	232	.44	46	229	.43	52
							50 MPH	203	.08	200	179	.09	223
D0109	UNL	BP	NA	10,446	72	10/10/79	IDLE (D)				330	.62	131
							50 MPH				239	.14	548
D0118	UNL	RE	NA	10,532	0	10/24/79	IDLE (D)	216	.45	173	16	.02	105
							50 MPH	122	.12	386	8	.01	388
R0154	LEAD	OR	NA	11,750	91	01/16/80	IDLE (D)	283	1.12	84	283	1.14	81
							50 MPH	180	.14	362	155	.14	402
R0157	LEAD	OR	NA	11,795	3	01/17/80	IDLE (D)	293	.49	94	273	.56	94
							50 MPH	174	.15	331	160	.14	351
R0165	LEAD	OR	NA	11,831	6	01/22/80	IDLE (D)	273	.42	121	243	.52	124
							50 MPH	161	.16	482	140	.16	502

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0173	UNL	BP	NA	11,877	22	01/25/80	IDLE (D)				273	1.40	77
							50 MPH				148	.18	462
R0178	UNL	OR	NA	11,909	0	01/28/80	IDLE (D)	263	1.12	77	253	.76	80
							50 MPH	165	.16	412	134	.07	457
R0184	UNL	OR	NA	12,118	17	01/30/80	IDLE (D)	247	1.09	84	241	.87	89
							50 MPH	171	.15	392	131	.07	437
R0189	UNL	OR	NA	12,331	18	02/01/80	IDLE (D)	263	1.65	66	263	1.40	68
							50 MPH	177	.15	367	133	.06	422
R0216	UNL	OR	NA	12,612	19	02/15/80	IDLE (D)	261	1.09	75	272	.58	76
							50 MPH	185	.17	301	160	.05	341
R0222	UNL	OR	NA	12,823	20	02/19/80	IDLE (D)	283	1.04	65	272	.45	69
							50 MPH	200	.14	296	173	.04	331
R0232	UNL	OR	NA	13,860	61	02/25/80	IDLE (D)	283	1.58	63	294	1.04	65
							50 MPH	213	.14	301	182	.04	331
R0244	UNL	OR	NA	14,894	65	03/04/80	IDLE (D)	305	1.62	68	294	1.21	68
							50 MPH	169	.13	351	132	.03	382
R0247	UNL	RE	NA	14,934	0	03/05/80	IDLE (D)	316	2.03	56	294	1.80	31
							50 MPH	182	.14	311	30	.01	336

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0057	UNL	OR	NA	9,287	0	08/09/79	IDLE (D)	198	.14	155	95	.01	121
							50 MPH	191	.09	229	82	.01	257
D0059	UNL	OR	NA	9,319	0	08/13/79	IDLE (D)	178	.13	171	77	.01	138
							50 MPH	173	.09	237	73	.01	246
D0077	UNL	OR	NA	9,462	0	08/29/79	IDLE (D)	204	.16	139	88	.03	121
							50 MPH	164	.11	224	79	.02	241
D0083	UNL	BP	NA	9,486	0	09/04/80	IDLE (D)				243	.15	143
							50 MPH				180	.09	324
D0092	UNL	BP	NA	9,567	0	09/13/79	IDLE (D)				477	.16	37
							50 MPH				170	.08	291
D0095	UNL	BP	NA	9,591	0	09/14/79	IDLE (D)				220	.15	182
							50 MPH				195	.09	308
D0100	LEAD	OR	NA	9,814	39	09/25/79	IDLE (D)	225	.16	177	164	.04	171
							50 MPH	220	.10	254	169	.06	274
D0119	LEAD	OR	NA	10,174	21	10/26/79	IDLE (D)	216	.27	244	190	.07	259
							50 MPH	236	.16	433	134	.13	455
D0126	LEAD	OR	NA	10,407	20	11/12/79	IDLE (D)	210	.24	246	139	.06	251
							50 MPH	160	.14	374	116	.10	396
D0136	LEAD	OR	NA	10,678	19	12/01/79	IDLE (D)	199	.20	210	146	.03	227
							50 MPH	176	.10	424	146	.10	434
D0142	LEAD	OR	NA	10,922	18	12/10/79	IDLE (D)	200	.19	292	144	.06	284
							50 MPH	168	.11	395	141	.09	385
D0148	LEAD	OR	NA	11,186	17	01/14/80	IDLE (D)	393	.24	111	313	.18	123
							50 MPH	214	.10	336	168	.09	367
D0151	LEAD	OR	NA	11,223	0	01/15/80	IDLE (D)	293	.29	112	249	.25	120
							50 MPH	210	.11	336	161	.10	387
D0163	LEAD	OR	NA	11,256	0	01/21/80	IDLE (D)	353	.22	163	243	.18	177
							50 MPH	198	.12	452	149	.11	497
D0169	LEAD	OR	NA	11,593	37	01/24/80	IDLE (D)	423	.14	155	263	.16	185
							50 MPH	187	.13	462	142	.13	507

AUTOMOTIVE TESTING LABORATORIES, INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	02 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0174	LEAD	OR	NA	11,841	4	01/26/80	IDLE (D)	293	.26	166	213	.22	191
							50 MPH	175	.13	412	140	.13	457
D0190	UNL	BP	NA	11,876	21	02/01/80	IDLE (D)				323	.29	136
							50 MPH				177	.13	422
R0200	UNL	OR	NA	11,946	0	02/07/80	IDLE (D)	253	.50	131	204	.18	139
							50 MPH	204	.13	357	143	.06	402
R0212	UNL	OR	NA	12,133	19	02/14/80	IDLE (D)	350	.37	139	250	.05	155
							50 MPH	216	.11	281	200	.05	341
R0219	UNL	OR	NA	12,347	19	02/18/80	IDLE (D)	272	.33	147	219	.04	166
							50 MPH	230	.11	256	179	.05	301
R0224	UNL	OR	NA	12,621	20	02/20/80	IDLE (D)	394	.21	148	272	.02	166
							50 MPH	223	.11	286	173	.04	341
R0230	UNL	OR	NA	12,902	41	02/23/80	IDLE (D)	294	.37	125	188	.04	144
							50 MPH	227	.11	271	182	.04	311
R0243	UNL	OR	NA	13,930	69	02/29/80	IDLE (D)	294	.30	160	185	.02	163
							50 MPH	270	.12	251	188	.03	301
R0246	UNL	OR	NA	14,940	71	03/05/80	IDLE (D)	316	.31	205	173	.02	215
							50 MPH	227	.11	261	138	.02	321
R0252	UNL	RE	NA	14,990	0	03/07/80	IDLE (D)	222	.25	331	12	.01	179
							50 MPH	203	.10	331	12	.01	331

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE			AFTER		
								HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0004	UNL	OR	NA	6,818	7	05/22/79	IDLE (D)	201	.07	240	76	.00	169
							50 MPH	111	.06	844	45	0.00	712
D0006	UNL	OR	NA	6,857	2	05/23/79	IDLE (D)	202	.08	199	78	.01	114
							50 MPH	138	.07	757	77	.00	575
D0007	UNL	OR	NA	6,886	0	05/25/79	IDLE (D)	194	.10	179	75	.02	112
							50 MPH	136	.08	890	75	.01	700
D0009	UNL	BP	NA	6,950	0	06/08/79	IDLE (D)				348	.16	47
							50 MPH				157	.07	675
D0011	UNL	BP	NA	7,014	6	06/13/79	IDLE (D)				178	.08	119
							50 MPH				120	.06	580
D0014	UNL	BP	NA	7,069	0	06/23/79	IDLE (D)				250	.12	41
							50 MPH				143	.02	626
D0049	LEAD	OR	NA	7,449	28	08/03/79	IDLE (D)	198	.07	65	113	.01	31
							50 MPH	134	.05	467	83	.01	236
D0073	LEAD	OR	NA	7,767	27	08/25/79	IDLE (D)	227	.07	60	190	.03	54
							50 MPH	150	.06	518	129	.04	469
D0088	LEAD	OR	NA	7,956	12	09/11/79	IDLE (D)	202	.08	75	167	.04	62
							50 MPH	132	.07	540	114	.05	492
D0098	LEAD	OR	NA	8,161	13	09/19/79	IDLE (D)	221	.09	88	187	.04	76
							50 MPH	166	.08	487	146	.05	437
D0103	LEAD	OR	NA	8,429	14	09/28/79	IDLE (D)	212	.10	96	178	.05	82
							50 MPH	140	.09	503	118	.06	469
D0111	LEAD	OR	NA	8,618	12	10/11/79	IDLE (D)	267	.12	154	215	.05	131
							50 MPH	180	.10	790	154	.06	742
D0121	LEAD	OR	NA	8,837	13	10/29/79	IDLE (D)	261	.11	168	210	.05	136
							50 MPH	164	.09	758	136	.06	740
D0127	LEAD	OR	NA	9,017	13	11/12/79	IDLE (D)	189	.14	161	133	.07	141
							50 MPH	91	.12	774	65	.09	752
D0135	LEAD	OR	NA	9,244	14	11/26/79	IDLE (D)	214	.11	150	153	.04	123
							50 MPH	103	.09	786	76	.05	701

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0141	LEAD	OR	NA	9,430	12	12/10/79	IDLE (D)	198	.12	164	151	.06	135
							50 MPH	100	.10	725	72	.07	687
D0155	LEAD	OR	NA	9,856	19	01/16/80	IDLE (D)	257	.12	117	223	.08	109
							50 MPH	115	.10	864	89	.09	789
D0158	LEAD	OR	NA	9,889	0	01/17/80	IDLE (D)	253	.12	98	217	.08	91
							50 MPH	124	.11	873	92	.09	827
D0160	LEAD	OR	NA	9,922	0	01/18/80	IDLE (D)	253	.12	95	218	.10	97
							50 MPH	115	.10	880	82	.09	832
D0164	UNL	BP	NA	9,961	19	01/21/80	IDLE (D)				197	.13	127
							50 MPH				92	.10	1200
R0168	UNL	OR	NA	9,993	0	01/24/80	IDLE (D)	203	.14	158	187	.11	140
							50 MPH	97	.11	1122	71	.08	1066
R0176	UNL	OR	NA	10,220	16	01/26/80	IDLE (D)	203	.13	131	161	.09	109
							50 MPH	92	.11	873	68	.08	799
R0182	UNL	OR	NA	10,490	16	01/29/80	IDLE (D)	203	.15	119	184	.11	132
							50 MPH	95	.11	918	70	.08	851
R0187	UNL	OR	NA	10,739	15	01/31/80	IDLE (D)	194	.14	128	145	.08	115
							50 MPH	98	.11	823	71	.07	799
R0206	UNL	OR	NA	10,931	16	02/09/80	IDLE (D)	195	.14	117	124	.07	86
							50 MPH	94	.11	789	64	.07	770
R0231	UNL	OR	NA	12,015	62	02/25/80	IDLE (D)	236	.13	102	132	.04	91
							50 MPH	108	.08	682	71	.04	687
R0245	UNL	OR	NA	13,046	61	03/05/80	IDLE (D)	222	.11	120	117	.03	99
							50 MPH	108	.08	799	68	.04	808
R0251	UNL	RE	NA	13,114	0	03/07/80	IDLE (D)	227	.11	115	92	.02	76
							50 MPH	105	.08	799	39	.01	741

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0018	UNL	OR	NA	7,283	0	06/27/79	IDLE (D)	187	.04	69	64	.00	61
							50 MPH	125	.02	335	64	.00	363
D0020	UNL	OR	NA	7,315	5	06/28/79	IDLE (D)	204	.08	33	73	.01	24
							50 MPH	131	.07	355	65	.00	311
D0022	UNL	OR	NA	7,349	2	06/29/79	IDLE (D)	194	.10	67	77	.03	50
							50 MPH	136	.09	400	76	.02	318
D0027	UNL	BP	NA	7,380	0	07/07/79	IDLE (D)				300	.13	30
							50 MPH				132	.07	359
D0031	UNL	BP	NA	7,437	6	07/10/79	IDLE (D)				210	.08	51
							50 MPH				140	.05	373
D0033	UNL	BP	NA	7,492	0	07/11/79	IDLE (D)				367	.14	24
							50 MPH				149	.08	410
D0054	LEAD	OR	NA	7,955	40	08/08/79	IDLE (D)	211	.08	40	152	.03	36
							50 MPH	114	.07	287	90	.05	305
D0082	LEAD	OR	NA	8,266	24	08/31/79	IDLE (D)	246	.08	39	189	.03	36
							50 MPH	150	.06	275	123	.04	257
D0094	LEAD	OR	NA	8,358	12	09/13/79	IDLE (D)	269	.09	40	224	.04	36
							50 MPH	147	.08	283	123	.06	263
D0101	LEAD	OR	NA	8,528	10	09/25/79	IDLE (D)	305	.11	59	237	.05	55
							50 MPH	169	.09	335	136	.06	322
D0107	LEAD	OR	NA	8,727	15	10/05/79	IDLE (D)	269	.11	62	275	.05	72
							50 MPH	162	.08	413	158	.07	454
D0113	LEAD	OR	NA	8,897	11	10/12/79	IDLE (D)	352	.13	82	275	.06	79
							50 MPH	199	.11	524	164	.08	461
D0122	LEAD	OR	NA	9,213	16	10/30/79	IDLE (D)	351	.09	103	288	.01	84
							50 MPH	160	.08	517	132	.05	421
D0124	LEAD	OR	NA	9,363	14	11/07/79	IDLE (D)	332	.16	86	225	.06	69
							50 MPH	128	.14	564	97	.10	499
D0140	LEAD	OR	NA	9,627	14	12/07/79	IDLE (D)	276	.12	137	249	.07	126
							50 MPH	119	.10	593	95	.07	560

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0146	LEAD	OR	NA	9,842	12	12/15/79	IDLE (D)	274	.11	70	227	.03	71
							50 MPH	113	.07	653	84	.04	506
D0156	LEAD	OR	NA	10,098	9	01/16/80	IDLE (D)	313	.12	75	266	.07	72
							50 MPH	130	.11	592	106	.09	562
D0159	LEAD	OR	NA	10,134	0	01/17/80	IDLE (D)	389	.13	60	269	.07	54
							50 MPH	134	.11	552	100	.09	477
D0172	UNL	BP	NA	10,165	18	01/25/80	IDLE (D)				303	.14	58
							50 MPH				103	.11	662
R0177	UNL	OR	NA	10,199	0	01/26/80	IDLE (D)	293	.14	44	257	.08	48
							50 MPH	106	.11	587	80	.09	562
R0180	UNL	OR	NA	10,385	16	01/28/80	IDLE (D)	333	.15	49	266	.07	55
							50 MPH	101	.11	587	76	.08	552
R0186	UNL	OR	NA	10,633	16	01/31/80	IDLE (D)	303	.14	53	251	.07	52
							50 MPH	107	.11	592	74	.08	562
R0205	UNL	OR	NA	10,864	15	02/09/80	IDLE (D)	343	.15	43	214	.06	49
							50 MPH	113	.11	572	80	.07	567
R0211	UNL	OR	NA	11,082	16	02/14/80	IDLE (D)	328	.12	50	227	.03	51
							50 MPH	117	.09	492	76	.05	482
R0233	UNL	OR	NA	12,119	67	02/25/80	IDLE (D)	503	.13	39	261	.02	50
							50 MPH	120	.09	482	82	.05	472
R0248	UNL	OR	NA	13,149	61	03/06/80	IDLE (D)	361	.12	63	169	.02	74
							50 MPH	117	.08	592	74	.04	602
R0253	UNL	RE	NA	13,179	0	03/07/80	IDLE (D)	361	.12	66	78	.01	62
							50 MPH	114	.08	592	31	.01	512

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0021	UNL	OR	OR	4,179	5	06/28/79	IDLE (D)	156	.26	236	56	.02	25
							50 MPH	111	.22	385	97	.82	91
D0023	UNL	OR	OR	4,210	0	06/29/79	IDLE (D)	157	.22	79	60	.01	38
							50 MPH	127	.64	432	127	.90	164
D0026	UNL	OR	OR	4,282	0	07/05/79	IDLE (D)	165	.26	219	75	.03	30
							50 MPH	128	.35	601	111	.37	132
D0028	UNL	BP	OR	4,319	8	07/07/79	IDLE (D)				150	.36	51
							50 MPH				136	.46	519
D0030	UNL	BP	OR	4,345	0	07/09/79	IDLE (D)				173	.23	207
							50 MPH				148	.73	471
D0032	UNL	BP	OR	4,373	0	07/10/79	IDLE (D)				166	.25	94
							50 MPH				125	.23	453
D0065	LEAD	OR	OR	4,731	58	08/15/79	IDLE (D)	175	1.13	174	178	1.04	150
							50 MPH	129	.25	473	94	.05	165
D0081	LEAD	OR	OR	4,902	14	08/31/79	IDLE (D)	221	2.99	70	225	2.90	68
							50 MPH	160	.95	370	161	1.20	325
D0090	LEAD	OR	OR	5,034	13	09/12/79	IDLE (D)	193	1.30	150	191	1.10	163
							50 MPH	154	.59	684	158	.55	320
D0104	LEAD	OR	OR	5,250	16	09/28/79	IDLE (D)	237	4.43	71	240	4.34	78
							50 MPH	142	.35	782	147	.52	424
D0108	LEAD	OR	OR	5,466	15	10/05/79	IDLE (D)	250	4.27	76	248	4.43	81
							50 MPH	143	.34	1013	115	.10	284
D0110	LEAD	OR	OR	5,719	17	10/11/79	IDLE (D)	306	5.79	131	309	5.17	159
							50 MPH	172	.43	1743	154	.11	506
D0123	LEAD	OR	OR	5,954	13	10/30/79	IDLE (D)	270	5.63	107	253	5.45	112
							50 MPH	110	.40	1324	82	.04	358
D0133	LEAD	OR	OR	6,050	13	11/17/79	IDLE (D)	255	6.22	99	248	6.39	101
							50 MPH	102	.50	1314	73	.07	462
D0139	LEAD	OR	OR	6,242	28	12/06/79	IDLE (D)	253	3.88	255	232	3.65	259
							50 MPH	126	1.07	1790	122	1.04	900

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0144	LEAD	OR	OR	6,637	16	12/15/79	IDLE (D)	241	4.98	188	239	4.84	173
							50 MPH	120	.40	1526	79	.03	729
D0161	LEAD	OR	OR	6,875	7	01/18/80	IDLE (D)	195	.62	502	174	.32	442
							50 MPH	121	.47	1310	86	.08	497
D0166	LEAD	OR	OR	6,944	4	01/22/80	IDLE (D)	181	.89	582	172	.31	642
							50 MPH	142	1.01	927	92	.50	382
D0196	LEAD	OR	OR	7,057	17	02/05/80	IDLE (D)	177	.43	682	168	.21	622
							50 MPH	149	2.13	562	148	1.79	552
D0228	LEAD	OR	OR	7,152	5	02/23/80	IDLE (D)	197	.47	552	187	.22	522
							50 MPH	141	.79	647	106	.54	432
R0235	LEAD	BP	OR	7,184	10	02/26/80	IDLE (D)				188	.50	442
							50 MPH				148	1.04	602
R0237	LEAD	BP	OR	7,213	0	02/27/80	IDLE (D)				197	.47	482
							50 MPH				151	1.15	622
R0240	UNL	BP	OR	7,241	18	02/28/80	IDLE (D)				191	.66	321
							50 MPH				114	.41	602
R0241	UNL	BP	OR	7,269	0	02/29/80	IDLE (D)				207	.70	271
							50 MPH				117	.43	592
R0249	UNL	BP	NW	7,302	0	03/06/80	IDLE (D)				166	.34	662
							50 MPH				111	.28	857
R0254	UNL	BP	NW	7,329	0	03/10/80	IDLE (D)				179	.43	432
							50 MPH				112	.47	789
R0260	UNL	OR	NW	7,358	0	03/11/80	IDLE (D)	185	.40	552	152	.06	562
							50 MPH	109	.31	857	65	.02	542
R0261	UNL	OR	OR	7,390	16	03/12/80	IDLE (D)	182	.66	702	166	.27	572
							50 MPH	114	.43	1419	77	.04	542
R0264	UNL	OR	OR	7,629	13	03/14/80	IDLE (D)	169	.75	482	157	.36	372
							50 MPH	89	.47	997	65	.02	351
R0266	UNL	OR	NW	7,666	0	03/17/80	IDLE (D)	176	.43	522	145	.07	452
							50 MPH	105	.35	833	63	.02	402

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0269	UNL	OR	OR	7,910	20	03/19/80	IDLE (D)	179	.78	362	163	.30	241
							50 MPH	105	.39	622	57	.02	351
R0272	UNL	OR	NW	7,941	0	03/21/80	IDLE (D)	176	.47	331	151	.08	241
							50 MPH	105	.36	612	54	.02	392
R0280	UNL	OR	OR	8,144	15	03/28/80	IDLE (D)	179	.50	382	148	.09	208
							50 MPH	97	.36	622	57	.02	362
R0282	UNL	OR	NW	8,174	0	03/31/80	IDLE (D)	179	.47	331	148	.09	190
							50 MPH	97	.31	602	51	.02	351
R0285	UNL	OR	OR	8,473	23	04/03/80	IDLE (D)	176	.50	412	154	.11	171
							50 MPH	95	.41	622	54	.02	301
R0286	UNL	OR	NW	8,504	9	04/07/80	IDLE (D)	182	.43	372	141	.07	195
							50 MPH	98	.33	642	51	.01	331
R0293	UNL	OR	NW	9,369	52	04/30/80	IDLE (D)	163	.47	241	129	.07	102
							50 MPH	83	.37	502	39	.01	271
R0297	UNL	OR	OR	9,543	4	05/13/80	IDLE (D)	176	.54	203	138	.18	58
							50 MPH	89	.41	492	27	.01	193
R0299	UNL	BP	OR	9,600	0	05/19/80	IDLE (D)				169	.58	241
							50 MPH				89	.42	552
R0300	UNL	BP	NW	9,634	0	05/20/80	IDLE (D)				176	.79	230
							50 MPH				92	.38	532
R0303	UNL	RE	OR	9,735	16	05/28/80	IDLE (D)	169	.54	231	39	.07	2
							50 MPH	86	.42	472	0	.01	38
R0306	UNL	RE	NW	9,846	0	06/02/80	IDLE (D)	169	.43	281	3	.02	16
							50 MPH	89	.36	492	0	.01	57

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0039	UNL	OR	OR	5,795	0	07/25/79	IDLE (D)	70	.36	42	49	.01	8
							50 MPH	78	.45	1099	49	.02	23
D0044	UNL	OR	OR	5,831	0	07/28/79	IDLE (D)	74	.37	43	52	.02	4
							50 MPH	87	.55	1360	49	.01	1
D0055	UNL	OR	OR	5,907	0	08/09/79	IDLE (D)	77	.41	45	55	.00	5
							50 MPH	86	.55	1169	51	.00	43
D0067	UNL	BP	OR	6,002	5	08/16/79	IDLE (D)				86	.46	61
							50 MPH				106	.74	1848
D0078	UNL	BP	OR	6,075	0	08/30/79	IDLE (D)				78	.40	41
							50 MPH				92	.50	1167
D0080	UNL	BP	OR	6,101	0	08/31/79	IDLE (D)				84	.45	51
							50 MPH				100	.66	1683
D0091	LEAD	OR	OR	6,371	26	09/12/79	IDLE (D)	85	.43	38	72	.05	0
							50 MPH	99	.50	1060	75	.03	31
D0096	LEAD	OR	OR	6,597	13	09/17/79	IDLE (D)	100	.42	46	89	.04	3
							50 MPH	113	.52	1081	90	.02	73
D0099	LEAD	OR	OR	6,853	12	09/24/79	IDLE (D)	82	.50	54	74	.09	1
							50 MPH	103	.60	1478	77	.05	200
D0106	LEAD	OR	OR	7,036	13	10/04/79	IDLE (D)	90	.65	53	84	.17	0
							50 MPH	116	.64	1581	100	.07	350
D0120	LEAD	OR	OR	7,275	14	10/27/79	IDLE (D)	47	.76	74	45	.05	6
							50 MPH	74	.82	1990	59	.05	837
D0134	LEAD	OR	OR	7,516	12	11/21/79	IDLE (D)	51	.77	68	48	.05	12
							50 MPH	47	.85	1147	39	.08	469
D0138	LEAD	OR	OR	7,641	13	12/04/79	IDLE (D)	39	.79	82	39	.13	7
							50 MPH	70	.94	2067	58	.07	944
D0143	LEAD	OR	OR	7,934	17	12/11/79	IDLE (D)	30	.77	75	26	.17	9
							50 MPH	59	.91	1970	52	.10	900
D0150	LEAD	OR	OR	8,144	3	01/14/80	IDLE (D)	49	.60	80	49	.17	22
							50 MPH	91	.80	1930	83	.19	1031

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0153	LEAD	OR	OR	8,174	4	01/15/80	IDLE (D)	35	.72	72	35	.16	24
							50 MPH	70	.85	2003	62	.22	1222
R0175	LEAD	BP	OR	8,220	4	01/26/80	IDLE (D)				37	.76	77
							50 MPH				71	1.01	2382
R0179	LEAD	BP	OR	8,250	0	01/28/80	IDLE (D)				37	.85	73
							50 MPH				70	1.04	2170
R0183	UNL	BP	OR	8,280	14	01/29/80	IDLE (D)				34	.82	69
							50 MPH				67	1.01	2143
R0185	UNL	BP	OR	8,309	0	01/30/80	IDLE (D)				37	.82	71
							50 MPH				67	.96	2130
R0193	UNL	BP	NW	8,339	0	02/04/80	IDLE (D)				35	.74	67
							50 MPH				65	1.06	1906
R0198	UNL	BP	NW	8,380	0	02/06/80	IDLE (D)				46	.94	67
							50 MPH				70	1.22	1906
R0202	UNL	OR	NW	8,406	0	02/08/80	IDLE (D)	44	.94	65	44	.29	35
							50 MPH	73	1.12	1978	65	.65	1527
R0207	UNL	OR	OR	8,445	0	02/09/80	IDLE (D)	44	.89	67	50	.12	17
							50 MPH	64	.96	2003	58	.17	1343
R0213	UNL	OR	OR	8,730	30	02/14/80	IDLE (D)	58	.77	61	48	.02	48
							50 MPH	70	.91	1769	60	.13	1054
R0215	UNL	OR	NW	8,760	0	02/15/80	IDLE (D)	48	.70	63	43	.02	50
							50 MPH	74	1.04	1780	68	.56	1245
R0218	UNL	OR	OR	8,927	15	02/18/80	IDLE (D)	51	.82	64	46	.11	22
							50 MPH	70	.94	1837	60	.15	1200
R0221	UNL	OR	NW	8,958	0	02/19/80	IDLE (D)	51	.77	63	39	.08	15
							50 MPH	73	1.09	1769	57	.45	1043
R0225	UNL	OR	OR	9,164	30	02/21/80	IDLE (D)	48	.75	61	45	.08	14
							50 MPH	67	.94	1769	57	.10	1088
R0227	UNL	OR	NW	9,212	0	02/23/80	IDLE (D)	58	.77	60	54	.03	12
							50 MPH	73	1.09	1791	64	.54	1310

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
R0236	UNL	OR	OR	9,503	20	02/26/80	IDLE (D)	65	.89	58	63	.02	14
							50 MPH	71	.94	1814	63	.20	1200
R0238	UNL	OR	NW	9,532	0	02/27/80	IDLE (D)	60	.75	61	54	.02	52
							50 MPH	74	1.04	1769	67	.50	1156
R0255	UNL	OR	OR	10,562	65	03/10/80	IDLE (D)	48	.75	74	43	.04	17
							50 MPH	65	.91	2157	57	.16	1310
R0259	UNL	OR	NW	10,610	5	03/11/80	IDLE (D)	45	.77	75	42	.02	15
							50 MPH	65	1.04	2130	63	.54	1506
R0265	UNL	OR	OR	11,642	56	03/17/80	IDLE (D)	55	.70	65	51	.02	46
							50 MPH	65	.84	1860	57	.07	1133
R0268	UNL	OR	NW	11,672	0	03/18/80	IDLE (D)	42	.66	65	36	.02	50
							50 MPH	68	.94	1860	65	.45	1200
R0271	UNL	BP	OR	11,701	0	03/20/80	IDLE (D)				55	.79	63
							50 MPH				71	.89	1837
R0273	UNL	BP	NW	11,728	0	03/21/80	IDLE (D)				40	.66	62
							50 MPH				74	1.04	1791
R0275	UNL	RE	OR	11,753	0	03/25/80	IDLE (D)	51	.66	58	33	.07	0
							50 MPH	65	.86	1860	3	.08	11
R0279	UNL	RE	NW	11,847	14	03/27/80	IDLE (D)	45	.68	62	31	.14	0
							50 MPH	65	1.04	1906	27	.46	13

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS bY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
D0043	UNL	OR	OR	5,182	0	07/27/79	IDLE (D)	115	.35	207	55	.01	29
							50 MPH	91	.43	658	53	.02	6
D0056	UNL	OR	OR	5,271	0	08/09/79	IDLE (D)	128	.40	194	59	.02	25
							50 MPH	102	.38	622	57	.02	13
D0060	UNL	OR	OR	5,299	0	08/13/79	IDLE (D)	125	.35	223	56	.01	11
							50 MPH	98	.40	728	59	.00	13
D0064	UNL	BP	OR	5,330	0	08/14/79	IDLE (D)				129	.38	207
							50 MPH				98	.43	665
D0075	UNL	BP	OR	5,384	0	08/27/79	IDLE (D)				138	.41	190
							50 MPH				108	.39	464
D0076	UNL	BP	OR	5,408	0	08/29/79	IDLE (D)				135	.42	186
							50 MPH				76	.41	217
D0097	LEAD	OR	OR	5,646	14	09/18/79	IDLE (D)	133	.36	186	83	.04	64
							50 MPH	111	.40	596	86	.13	21
D0105	LEAD	OR	OR	5,870	26	10/03/79	IDLE (D)	150	.40	295	74	.04	96
							50 MPH	112	.42	769	77	.09	50
D0112	LEAD	OR	OR	6,121	12	10/12/79	IDLE (D)	194	.56	330	102	.07	100
							50 MPH	148	.57	1092	101	.15	115
D0131	LEAD	OR	OR	6,341	15	11/13/79	IDLE (D)	151	.44	335	59	.05	132
							50 MPH	95	.63	1009	54	.17	119
D0137	LEAD	OR	OR	6,606	13	12/03/79	IDLE (D)	141	.50	393	48	.05	148
							50 MPH	79	.54	1112	39	.06	505
D0145	LEAD	OR	OR	6,831	14	12/15/79	IDLE (D)	130	.38	394	43	.00	185
							50 MPH	79	.50	1105	43	.00	503
D0147	LEAD	OR	OR	7,004	0	12/27/79	IDLE (D)	140	.41	373	54	.03	156
							50 MPH	82	.61	1073	49	.10	254
D0149	LEAD	OR	OR	7,024	0	01/14/80	IDLE (D)	177	.30	222	86	.04	131
							50 MPH	97	.60	818	74	.11	177
D0152	LEAD	OR	OR	7,057	3	01/15/80	IDLE (D)	161	.31	218	83	.05	117
							50 MPH	97	.54	944	71	.08	148

AUTOMOTIVE TESTING LABORATORIES, INC.
651 CHAMBERS ROAD, SUITE # 200
AURORA, COLORADO 80011

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	BEFORE HC ppmh	BEFORE CO %	BEFORE NO ppm	AFTER HC ppmh	AFTER CO %	AFTER NO ppm
D0167	LEAD	OR	OR	7,369	28	01/22/80	IDLE (D)	177	.35	242	80	.06	135
							50 MPH	95	.65	1289	61	.07	387
D0170	LEAD	OR	OR	7,589	4	01/24/80	IDLE (D)	165	.35	367	79	.06	164
							50 MPH	98	.63	1332	64	.08	397
D0188	LEAD	OR	OR	7,959	31	01/31/80	IDLE (D)	151	.40	301	77	.06	124
							50 MPH	95	.62	1310	62	.09	402
R0195	LEAD	BP	OR	8,006	0	02/05/80	IDLE (D)				145	.40	210
							50 MPH				98	.62	900
R0197	LEAD	BP	OR	8,034	0	02/06/80	IDLE (D)				145	.37	205
							50 MPH				97	.63	900
R0201	UNL	BP	OR	8,062	17	02/07/80	IDLE (D)				148	.62	182
							50 MPH				92	.74	813
R0203	UNL	BP	OR	8,090	0	02/08/80	IDLE (D)				142	.58	187
							50 MPH				79	.50	799
R0214	UNL	BP	NW	8,125	0	02/15/80	IDLE (D)				162	.54	191
							50 MPH				95	.56	632
R0217	UNL	BP	NW	8,155	0	02/18/80	IDLE (D)				157	.58	177
							50 MPH				100	.64	702
R0220	UNL	OR	NW	8,183	0	02/19/80	IDLE (D)	160	.62	222	68	.03	61
							50 MPH	100	.64	956	73	.06	205
R0223	UNL	OR	OR	8,215	12	02/20/80	IDLE (D)	168	.62	213	65	.02	58
							50 MPH	98	.70	887	80	.08	171
R0229	UNL	OR	OR	8,513	15	02/23/80	IDLE (D)	180	.79	179	101	.09	20
							50 MPH	98	.66	927	86	.12	210
R0234	UNL	OR	NW	8,550	0	02/26/80	IDLE (D)	169	.58	195	51	.02	60
							50 MPH	92	.62	882	68	.04	207
R0239	UNL	OR	OR	8,763	14	02/28/80	IDLE (D)	185	.70	166	101	.04	22
							50 MPH	101	.62	900	83	.11	195
R0242	UNL	OR	NW	8,794	0	02/29/80	IDLE (D)	169	.58	170	57	.02	42
							50 MPH	89	.58	927	60	.03	230

APPENDIX G (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST EMISSION RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

								BEFORE			AFTER		
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	HC ppmh	CO %	NO ppm	HC ppmh	CO %	NO ppm
R0250	UNL	OR	OR	9,002	14	03/06/80	IDLE (D)	173	.89	251	95	.23	40
							50 MPH	92	.52	1178	48	.03	462
R0258	UNL	OR	NW	9,039	0	03/11/80	IDLE (D)	173	.62	241	68	.02	46
							50 MPH	89	.50	1156	45	.03	351
R0262	UNL	OR	OR	9,240	14	03/13/80	IDLE (D)	176	.84	218	108	.15	26
							50 MPH	89	.58	1088	60	.06	230
R0263	UNL	OR	NW	9,277	0	03/14/80	IDLE (D)	169	.58	190	57	.02	41
							50 MPH	89	.62	904	65	.05	185
R0267	UNL	OR	OR	10,305	52	03/18/80	IDLE (D)	176	.75	195	114	.10	14
							50 MPH	86	.54	789	42	.02	251
R0270	UNL	OR	NW	10,335	0	03/19/80	IDLE (D)	163	.54	193	54	.02	48
							50 MPH	98	.58	873	65	.04	166
R0274	UNL	OR	OR	11,365	57	03/24/80	IDLE (D)	157	.58	187	65	.02	25
							50 MPH	83	.62	900	63	.09	136
R0276	UNL	OR	NW	11,392	0	03/25/80	IDLE (D)	160	.54	185	51	.01	50
							50 MPH	89	.54	882	42	.02	321
R0281	UNL	BP	OR	11,422	0	03/31/80	IDLE (D)				166	.62	182
							50 MPH				89	.66	662
R0283	UNL	BP	NW	11,450	0	04/01/80	IDLE (D)				151	.50	182
							50 MPH				94	.62	582
R0287	UNL	RE	OR	11,482	10	04/15/80	IDLE (D)	166	.58	187	6	.04	1
							50 MPH	85	.62	770	1	.11	4
R0288	UNL	RE	NW	11,514	0	04/16/80	IDLE (D)	160	.50	198	2	.02	1
							50 MPH	80	.58	808	2	.05	4

CATALYST DETERIORATION/REJUVENATION

APPENDIX H - LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number

FUEL - Fuel type

- UNL - Unleaded
- LEAD - Leaded

CONV - Converter status

- OR - Original
- BP - Bypass
- RE - Replaced

O_2 SENSOR - Oxygen Sensor

- NA - Not Applicable (Oxidation Catalyst)
- NW - Replacement 3-way
- OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

SPEED - Vehicle speed

- IDLE(D) - Vehicle at idle, transmission in drive
- 50 MPH - Vehicle at 50 miles per hour

CONV POS - Converter position

- LEFT - Left converter on dual exhaust vehicle
- RIGHT - Right converter on dual exhaust vehicle
- (blank) - Single exhaust vehicle

BEFORE - Emission readings taken before the catalytic converter

AFTER - Emission readings taken after the catalytic converter

TOP TEMP - Temperature readings in Fahrenheit taken at the top of the pipe

BOT TEMP - Temperature readings in Fahrenheit taken at the bottom of the pipe

APPENDIX H

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	-BEFORE - TOP TEMP	BOT TEMP	- AFTER - TOP TEMP	BOT TEMP
R0154	LEAD	OR	NA	11,750	91	01/16/80	IDLE (D)	LEFT	370	361	297	293
								RIGHT	470	481	280	242
							50 MPH	LEFT	666	650	455	440
								RIGHT	699	705	431	404
R0157	LEAD	OR	NA	11,795	3	01/17/80	IDLE (D)	LEFT	379	346	284	277
								RIGHT	488	492	299	263
							50 MPH	LEFT	691	656	460	463
								RIGHT	704	710	467	405
R0165	LEAD	OR	NA	11,831	6	01/22/80	IDLE (D)	LEFT	390	374	306	303
								RIGHT	484	483	290	253
							50 MPH	LEFT	661	642	463	467
								RIGHT	693	715	455	395
R0173	UNL	BP	NA	11,877	22	01/25/80	IDLE (D)	LEFT			303	290
								RIGHT			328	333
							50 MPH	LEFT			598	561
								RIGHT			600	560
R0178	UNL	OR	NA	11,909	0	01/28/80	IDLE (D)	LEFT	398	333	328	314
								RIGHT	467	445	345	347
							50 MPH	LEFT	702	662	476	446
								RIGHT	715	628	450	454
R0184	UNL	OR	NA	12,118	17	01/30/80	IDLE (D)	LEFT	425	382	331	330
								RIGHT	474	461	389	373
							50 MPH	LEFT	666	641	441	431
								RIGHT	699	613	455	448
R0189	UNL	OR	NA	12,331	18	02/01/80	IDLE (D)	LEFT	409	348	341	317
								RIGHT	455	422	347	387
							50 MPH	LEFT	682	651	447	443
								RIGHT	691	630	452	436
R0216	UNL	OR	NA	12,612	19	02/15/80	IDLE (D)	LEFT	412	343	323	316
								RIGHT	452	447	380	376
							50 MPH	LEFT	705	674	438	421
								RIGHT	714	636	485	468
R0222	UNL	OR	NA	12,823	20	02/19/80	IDLE (D)	LEFT	387	347	320	315
								RIGHT	467	448	369	364
							50 MPH	LEFT	688	649	445	425
								RIGHT	693	652	465	456

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
R0232	UNL	OR	NA	13,860	61	02/25/80	IDLE (D)	LEFT	384	310	294	287
								RIGHT	455	429	378	371
							50 MPH	LEFT	673	622	409	407
								RIGHT	694	626	456	452
R0244	UNL	OR	NA	14,894	65	03/04/80	IDLE (D)	LEFT	407	407	315	315
								RIGHT	420	430	392	383
							50 MPH	LEFT	686	663	410	440
								RIGHT	709	650	466	460
R0247	UNL	RE	NA	14,934	0	03/05/80	IDLE (D)	LEFT	432	444	363	333
								RIGHT	488	500	377	360
							50 MPH	LEFT	694	702	465	430
								RIGHT	726	683	475	442

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
D0148	LEAD	OR	NA	11,186	17	01/14/80	IDLE (D)	LEFT	457	427	322	321
								RIGHT	500	530	350	310
							50 MPH	LEFT	716	664	436	444
								RIGHT	719	734	457	394
D0151	LEAD	OR	NA	11,223	0	01/15/80	IDLE (D)	LEFT	436	389	287	304
								RIGHT	457	502	299	267
							50 MPH	LEFT	668	575	388	425
								RIGHT	690	720	413	345
D0163	LEAD	OR	NA	11,256	0	01/21/80	IDLE (D)	LEFT	428	423	307	297
								RIGHT	531	530	322	290
							50 MPH	LEFT	685	684	476	485
								RIGHT	730	740	464	412
D0169	LEAD	OR	NA	11,593	37	01/24/80	IDLE (D)	LEFT	430	437	300	290
								RIGHT	508	520	311	281
							50 MPH	LEFT	688	674	469	466
								RIGHT	715	699	452	409
D0174	LEAD	OR	NA	11,841	4	01/26/80	IDLE (D)	LEFT	418	417	305	299
								RIGHT	507	516	316	291
							50 MPH	LEFT	681	670	459	466
								RIGHT	710	727	449	403
D0190	UNL	BP	NA	11,876	21	02/01/80	IDLE (D)	LEFT			420	384
								RIGHT			369	360
							50 MPH	LEFT			702	663
								RIGHT			681	661
R0200	UNL	OR	NA	11,946	0	02/07/80	IDLE (D)	LEFT	411	365	338	322
								RIGHT	527	560	355	320
							50 MPH	LEFT	614	620	450	415
								RIGHT	700	641	447	387
R0212	UNL	OR	NA	12,133	19	02/14/80	IDLE (D)	LEFT	413	387	316	310
								RIGHT	368	510	491	329
							50 MPH	LEFT	657	696	494	444
								RIGHT	475	663	720	435
R0219	UNL	OR	NA	12,347	19	02/18/80	IDLE (D)	LEFT	381	372	323	310
								RIGHT	360	473	474	326
							50 MPH	LEFT	644	695	511	470
								RIGHT	482	700	743	441

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	-BEFORE - TOP TEMP	-BEFORE - BOT TEMP	- AFTER - TOP TEMP	- AFTER - BOT TEMP
R0224	UNL	OR	NA	12,621	20	02/20/80	IDLE (D)	LEFT	395	378	317	305
								RIGHT	356	496	478	328
							50 MPH	LEFT	651	689	502	447
								RIGHT	484	658	726	451
R0230	UNL	OR	NA	12,902	41	02/23/80	IDLE (D)	LEFT	334	340	280	269
								RIGHT	445	431	313	283
							50 MPH	LEFT	601	662	462	429
								RIGHT	650	730	453	417
R0243	UNL	OR	NA	13,930	69	02/29/80	IDLE (D)	LEFT	420	392	346	357
								RIGHT	497	460	368	331
							50 MPH	LEFT	627	670	444	497
								RIGHT	721	670	463	412
R0246	UNL	OR	NA	14,940	71	03/05/80	IDLE (D)	LEFT	405	455	353	365
								RIGHT	479	497	399	382
							50 MPH	LEFT	590	659	426	462
								RIGHT	706	655	480	457
R0252	UNL	RE	NA	14,990	0	03/07/80	IDLE (D)	LEFT	482	504	397	408
								RIGHT	519	537	422	413
							50 MPH	LEFT	676	731	499	547
								RIGHT	730	714	516	499

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
D0155	LEAD	OR	NA	9,856	19	01/16/80	IDLE (D)		302	294	320	330
							50 MPH		535	538	450	476
D0158	LEAD	OR	NA	9,889	0	01/17/80	IDLE (D)		282	284	318	327
							50 MPH		532	536	447	472
D0160	LEAD	OR	NA	9,922	0	01/18/80	IDLE (D)		298	293	315	327
							50 MPH		513	512	435	459
D0164	UNL	BP	NA	9,961	19	01/21/80	IDLE (D)				251	251
							50 MPH				515	524
R0168	UNL	OR	NA	9,993	0	01/24/80	IDLE (D)		315	310	378	383
							50 MPH		603	608	532	544
R0176	UNL	OR	NA	10,220	16	01/26/80	IDLE (D)		343	356	370	386
							50 MPH		523	543	471	485
R0182	UNL	OR	NA	10,490	16	01/29/80	IDLE (D)		317	309	326	341
							50 MPH		527	536	452	477
R0187	UNL	OR	NA	10,739	15	01/31/80	IDLE (D)		354	353	369	381
							50 MPH		549	571	470	491
R0206	UNL	OR	NA	10,931	16	02/09/80	IDLE (D)		350	332	319	328
							50 MPH		560	563	456	472
R0231	UNL	OR	NA	12,015	62	02/25/80	IDLE (D)		314	306	321	325
							50 MPH		540	546	458	471
R0245	UNL	OR	NA	13,046	61	03/05/80	IDLE (D)		388	383	395	402
							50 MPH		568	582	504	515
R0251	UNL	RE	NA	13,114	0	03/07/80	IDLE (D)		364	364	395	407
							50 MPH		537	562	500	516

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
D0156	LEAD	OR	NA	10,098	9	01/16/80	IDLE (D)		289	260	333	321
							50 MPH		520	476	486	465
D0159	LEAD	OR	NA	10,134	0	01/17/80	IDLE (D)		325	305	359	347
							50 MPH		515	476	504	483
D0172	UNL	BP	NA	10,165	18	01/25/80	IDLE (D)				290	278
							50 MPH				583	569
R0177	UNL	OR	NA	10,199	0	01/26/80	IDLE (D)		343	344	345	382
							50 MPH		529	500	456	498
R0180	UNL	OR	NA	10,385	16	01/28/80	IDLE (D)		351	354	371	401
							50 MPH		538	520	476	514
R0186	UNL	OR	NA	10,633	16	01/31/80	IDLE (D)		375	372	388	411
							50 MPH		479	452	477	494
R0205	UNL	OR	NA	10,864	15	02/09/80	IDLE (D)		325	306	325	333
							50 MPH		509	474	439	452
R0211	UNL	OR	NA	11,082	16	02/14/80	IDLE (D)		340	335	365	372
							50 MPH		523	501	480	496
R0233	UNL	OR	NA	12,119	67	02/25/80	IDLE (D)		333	320	323	315
							50 MPH		530	503	474	488
R0248	UNL	OR	NA	13,149	61	03/06/80	IDLE (D)		356	360	372	384
							50 MPH		532	527	480	514
R0253	UNL	RE	NA	13,179	0	03/07/80	IDLE (D)		357	387	431	433
							50 MPH		510	592	562	565

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
D0161	LEAD	OR	OR	6,875	7	01/18/80	IDLE (D)	LEFT	351	381	350	341
								RIGHT	400	389	391	358
							50 MPH	LEFT	568	571	455	447
								RIGHT	592	547	502	485
D0166	LEAD	OR	OR	6,944	4	01/22/80	IDLE (D)	LEFT	397	420	372	364
								RIGHT	331	324	332	313
							50 MPH	LEFT	588	591	449	455
								RIGHT	522	501	450	411
D0196	LEAD	OR	OR	7,057	17	02/05/80	IDLE (D)	LEFT	366	368	378	357
								RIGHT	415	403	405	378
							50 MPH	LEFT	584	594	508	490
								RIGHT	600	556	529	477
D0228	LEAD	OR	OR	7,152	5	02/23/80	IDLE (D)	LEFT	363	404	366	311
								RIGHT	402	345	391	370
							50 MPH	LEFT	560	597	489	390
								RIGHT	616	518	518	490
R0235	LEAD	BP	OR	7,184	10	02/26/80	IDLE (D)	LEFT			267	318
								RIGHT			300	291
							50 MPH	LEFT			447	543
								RIGHT			511	490
R0237	LEAD	BP	OR	7,213	0	02/27/80	IDLE (D)	LEFT			283	321
								RIGHT			298	286
							50 MPH	LEFT			467	556
								RIGHT			518	501
R0240	UNL	BP	OR	7,241	18	02/28/80	IDLE (D)	LEFT			271	306
								RIGHT			291	282
							50 MPH	LEFT			473	561
								RIGHT			518	505
R0241	UNL	BP	OR	7,269	0	02/29/80	IDLE (D)	LEFT			285	325
								RIGHT			298	290
							50 MPH	LEFT			469	555
								RIGHT			510	495
R0249	UNL	BP	NW	7,302	0	03/06/80	IDLE (D)	LEFT			313	353
								RIGHT			378	371
							50 MPH	LEFT			478	562
								RIGHT			562	557

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
R0254	UNL	BP	NW	7,329	0	03/10/80	IDLE (D)	LEFT			392	332
								RIGHT			359	352
							50 MPH	LEFT			479	560
								RIGHT			557	550
R0260	UNL	OR	NW	7,358	0	03/11/80	IDLE (D)	LEFT	428	344	373	369
								RIGHT	459	450	428	408
							50 MPH	LEFT	625	531	488	458
								RIGHT	670	618	523	488
R0261	UNL	OR	OR	7,390	16	03/12/80	IDLE (D)	LEFT	445	371	400	390
								RIGHT	437	410	441	415
							50 MPH	LEFT	660	567	522	491
								RIGHT	669	609	569	539
R0264	UNL	OR	OR	7,629	13	03/14/80	IDLE (D)	LEFT	471	396	401	397
								RIGHT	475	446	477	440
							50 MPH	LEFT	652	550	516	489
								RIGHT	689	630	569	526
R0266	UNL	OR	NW	7,666	0	03/17/80	IDLE (D)	LEFT	459	377	398	393
								RIGHT	472	445	452	427
							50 MPH	LEFT	645	546	512	486
								RIGHT	680	622	554	520
R0269	UNL	OR	OR	7,910	20	03/19/80	IDLE (D)	LEFT	450	369	399	395
								RIGHT	463	451	473	445
							50 MPH	LEFT	658	542	521	493
								RIGHT	692	657	571	537
R0272	UNL	OR	NW	7,941	0	03/21/80	IDLE (D)	LEFT	451	377	404	403
								RIGHT	434	425	446	432
							50 MPH	LEFT	632	539	506	480
								RIGHT	647	607	524	506
R0280	UNL	OR	OR	8,144	15	03/28/80	IDLE (D)	LEFT	468	400	412	406
								RIGHT	463	445	468	451
							50 MPH	LEFT	657	543	520	490
								RIGHT	668	623	551	535
R0282	UNL	OR	NW	8,174	0	03/31/80	IDLE (D)	LEFT	451	359	395	388
								RIGHT	459	438	447	423
							50 MPH	LEFT	654	520	515	481
								RIGHT	677	625	545	512

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
R0285	UNL	OR	OR	8,473	23	04/03/80	IDLE (D)	LEFT	460	363	412	400
								RIGHT	470	439	475	449
							50 MPH	LEFT	657	533	525	488
								RIGHT	693	613	554	525
R0286	UNL	OR	NW	8,504	9	04/07/80	IDLE (D)	LEFT	420	321	405	382
								RIGHT	463	414	438	402
							50 MPH	LEFT	642	512	523	478
								RIGHT	667	582	528	480
R0293	UNL	OR	NW	9,369	52	04/30/80	IDLE (D)	LEFT	435	380	423	402
								RIGHT	456	408	442	441
							50 MPH	LEFT	614	543	510	474
								RIGHT	664	593	539	529
R0297	UNL	OR	OR	9,543	4	05/13/80	IDLE (D)	LEFT	398	345	391	372
								RIGHT	305	363	368	372
							50 MPH	LEFT	640	548	517	477
								RIGHT	617	522	507	493
R0299	UNL	BP	OR	9,600	0	05/19/80	IDLE (D)	LEFT			280	302
								RIGHT			302	322
							50 MPH	LEFT			488	549
								RIGHT			509	560
R0300	UNL	BP	NW	9,634	0	05/20/80	IDLE (D)	LEFT			277	311
								RIGHT			291	306
							50 MPH	LEFT			495	555
								RIGHT			497	542
R0303	UNL	RE	OR	9,735	16	05/28/80	IDLE (D)	LEFT	416	356	357	353
								RIGHT	437	447	436	427
							50 MPH	LEFT	650	552	464	456
								RIGHT	644	686	564	543
R0306	UNL	RE	NW	9,846	0	06/02/80	IDLE (D)	LEFT	475	422	423	415
								RIGHT	434	413	475	462
							50 MPH	LEFT	665	590	504	498
								RIGHT	614	629	571	553

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
D0150	LEAD	OR	OR	8,144	3	01/14/80	IDLE (D)		372	370	353	338
							50 MPH		592	609	453	450
D0153	LEAD	OR	OR	8,174	4	01/15/80	IDLE (D)		411	410	400	377
							50 MPH		639	674	488	429
R0175	LEAD	BP	OR	8,220	4	01/26/80	IDLE (D)				365	364
							50 MPH				660	649
R0179	LEAD	BP	OR	8,250	0	01/28/80	IDLE (D)				350	348
							50 MPH				653	644
R0183	UNL	BP	OR	8,280	14	01/29/80	IDLE (D)				346	345
							50 MPH				639	625
R0185	UNL	BP	OR	8,309	0	01/30/80	IDLE (D)				408	409
							50 MPH				694	684
R0193	UNL	BP	NW	8,339	0	02/04/80	IDLE (D)				383	386
							50 MPH				672	661
R0198	UNL	BP	NW	8,380	0	02/06/80	IDLE (D)				321	321
							50 MPH				612	615
R0202	UNL	OR	NW	8,406	0	02/08/80	IDLE (D)		330	327	350	323
							50 MPH		559	572	514	496
R0207	UNL	OR	OR	8,445	0	02/09/80	IDLE (D)		360	350	380	356
							50 MPH		550	566	517	498
R0213	UNL	OR	OR	8,730	30	02/14/80	IDLE (D)		333	325	364	345
							50 MPH		547	553	510	490
R0215	UNL	OR	NW	8,760	0	02/15/80	IDLE (D)		333	323	356	329
							50 MPH		537	552	489	468
R0218	UNL	OR	OR	8,927	15	02/18/80	IDLE (D)		350	345	363	346
							50 MPH		622	639	544	526
R0221	UNL	OR	NW	8,958	0	02/19/80	IDLE (D)		415	417	390	381
							50 MPH		638	654	535	521

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	-BEFORE - TOP TEMP	BOT TEMP	- AFTER - TOP TEMP	BOT TEMP
R0225	UNL	OR	OR	9,164	30	02/21/80	IDLE (D)		390	393	387	367
							50 MPH		621	654	540	526
R0227	UNL	OR	NW	9,212	0	02/23/80	IDLE (D)		337	341	346	320
							50 MPH		556	596	489	463
R0236	UNL	OR	OR	9,503	20	02/26/80	IDLE (D)		347	344	373	340
							50 MPH		584	613	531	500
R0238	UNL	OR	NW	9,532	0	02/27/80	IDLE (D)		362	361	382	362
							50 MPH		587	619	518	504
R0255	UNL	OR	OR	10,562	65	03/10/80	IDLE (D)		418	417	417	408
							50 MPH		626	657	538	542
R0259	UNL	OR	NW	10,610	5	03/11/80	IDLE (D)		446	446	429	430
							50 MPH		642	671	527	537
R0265	UNL	OR	OR	11,642	56	03/17/80	IDLE (D)		372	372	377	366
							50 MPH		612	644	534	534
R0268	UNL	OR	NW	11,672	0	03/18/80	IDLE (D)		393	396	388	379
							50 MPH		603	632	503	501
R0271	UNL	BP	OR	11,701	0	03/20/80	IDLE (D)				380	388
							50 MPH				624	643
R0273	UNL	BP	NW	11,728	0	03/21/80	IDLE (D)				377	376
							50 MPH				612	609
R0275	UNL	RE	OR	11,753	0	03/25/80	IDLE (D)		406	390	430	410
							50 MPH		589	579	564	540
R0279	UNL	RE	NW	11,847	14	03/27/80	IDLE (D)		422	397	446	422
							50 MPH		593	568	559	531

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
D0149	LEAD	OR	OR	7,024	0	01/14/80	IDLE (D)		362	319	431	386
							50 MPH		544	468	555	495
D0152	LEAD	OR	OR	7,057	3	01/15/80	IDLE (D)		428	394	465	408
							50 MPH		576	486	565	484
D0167	LEAD	OR	OR	7,369	28	01/22/80	IDLE (D)		411	376	462	435
							50 MPH		586	534	566	533
D0170	LEAD	OR	OR	7,589	4	01/24/80	IDLE (D)		447	406	477	446
							50 MPH		595	532	593	549
D0188	LEAD	OR	OR	7,959	31	01/31/80	IDLE (D)		430	405	465	427
							50 MPH		581	514	569	520
R0195	LEAD	BP	OR	8,006	0	02/05/80	IDLE (D)				315	309
							50 MPH				549	522
R0197	LEAD	BP	OR	8,034	0	02/06/80	IDLE (D)				294	286
							50 MPH				563	529
R0201	UNL	BP	OR	8,062	17	02/07/80	IDLE (D)				276	261
							50 MPH				573	531
R0203	UNL	BP	OR	8,090	0	02/08/80	IDLE (D)				296	280
							50 MPH				583	541
R0214	UNL	BP	NW	8,125	0	02/15/80	IDLE (D)				304	294
							50 MPH				594	563
R0217	UNL	BP	NW	8,155	0	02/18/80	IDLE (D)				306	299
							50 MPH				582	557
R0220	UNL	OR	NW	8,183	0	02/19/80	IDLE (D)		393	358	447	411
							50 MPH		608	534	552	516
R0223	UNL	OR	OR	8,215	12	02/20/80	IDLE (D)		355	323	418	390
							50 MPH		581	511	533	497
R0229	UNL	OR	OR	8,513	15	02/23/80	IDLE (D)		391	338	412	375
							50 MPH		562	482	537	498

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
R0234	UNL	OR	NW	8,550	0	02/26/80	IDLE (D) 50 MPH		454 634	400 556	476 609	445 574
R0239	UNL	OR	OR	8,763	14	02/28/80	IDLE (D) 50 MPH		428 604	390 541	460 582	420 542
R0242	UNL	OR	NW	8,794	0	02/29/80	IDLE (D) 50 MPH		398 596	365 520	426 555	391 518
R0250	UNL	OR	OR	9,002	14	03/06/80	IDLE (D) 50 MPH		427 591	397 527	474 580	444 547
R0258	UNL	OR	NW	9,039	0	03/11/80	IDLE (D) 50 MPH		416 603	381 528	490 590	460 557
R0262	UNL	OR	OR	9,240	14	03/13/80	IDLE (D) 50 MPH		427 599	388 528	470 582	440 553
R0263	UNL	OR	NW	9,277	0	03/14/80	IDLE (D) 50 MPH		421 583	393 538	462 606	436 575
R0267	UNL	OR	OR	10,305	52	03/18/80	IDLE (D) 50 MPH		400 550	376 507	455 566	425 534
R0270	UNL	OR	NW	10,335	0	03/19/80	IDLE (D) 50 MPH		407 559	382 518	461 586	433 551
R0274	UNL	OR	OR	11,365	57	03/24/80	IDLE (D) 50 MPH		592 570	374 539	473 597	439 562
R0276	UNL	OR	NW	11,392	0	03/25/80	IDLE (D) 50 MPH		380 550	365 523	453 579	425 550
R0281	UNL	BP	OR	11,422	0	03/31/80	IDLE (D) 50 MPH				333 554	327 551
R0283	UNL	BP	NW	11,450	0	04/01/80	IDLE (D) 50 MPH				324 549	324 558
R0287	UNL	RE	OR	11,482	10	04/15/80	IDLE (D) 50 MPH		347 464	380 543	433 545	404 522

APPENDIX H (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF CATALYST TEST TEMPERATURES BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

									-BEFORE -		- AFTER -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE	SPEED	CONV. POS	TOP TEMP	BOT TEMP	TOP TEMP	BOT TEMP
R0288	UNL	RE	NW	11,514	0	04/16/80	IDLE (D)		381	365	416	401
							50 MPH		540	522	535	522

CATALYST DETERIORATION/REJUVENATION

APPENDIX I - LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

Legend

VEH. NO. - Vehicle number

MODL YEAR - Model year

MAKE - Vehicle make

MODL - Vehicle model

CID - Engine displacement in cubic inches

CONV. - Type of catalytic converter

TEST NO. - Test number; or INSP for as-received status

FUEL - Fuel type

UNL - Unleaded
LEAD - Leaded

CONV - Converter status

OR - Original
BP - Bypass
RE - Replaced

O_2 SENSOR - Oxygen Sensor

NA - Not Applicable (Oxidation Catalyst)
NW - Replacement 3-way
OR - Original 3-way

ODOM - Odometer reading at beginning of test sequence

GAL. - Gallons of fuel used since prior test sequence

DATE - Date of test (month/day/year)

SPEC - Manufacturer specification

MEAS - Measured readings

IDLE RPM - Idle RPM in specified transmission position

TIMING - Timing measure

+99 - No timing measure, not adjustable

PROPANE ENRICHMENT - Propane injection procedure

DRIVE - Readings taken with vehicle in drive

NEUTRAL - Readings taken with vehicle in neutral

W/OUT - Without propane enrichment
WITH - With propane enrichment

APPENDIX I

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

										-PROPANE ENRICHMENT -			
										- DRIVE —		-NEUTRAL -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	W/OUT	WITH	W/OUT	WITH
INSP				8,277		05/09/79	SPEC MEAS	600 620	+08 +10	620	600	880	960
D0001	UNL	OR	NA	8,316	0	05/16/79	MEAS	600	+08	600	600	840	880
D0003	UNL	OR	NA	8,394	0	05/21/79	MEAS	600	+08	600	580	800	850
D0005	UNL	OR	NA	8,442	8	05/23/79	MEAS	600	+08	600	650	800	870
D0008	UNL	BP	NA	8,694	5	06/05/79	MEAS	600	+08	600	580	800	840
D0010	UNL	BP	NA	8,733	0	06/12/79	MEAS	570	+08	570	590	750	840
D0013	UNL	BP	NA	8,760	6	06/14/79	MEAS	590	+08	590	590	790	840
D0034	LEAD	OR	NA	9,046	40	07/11/79	MEAS	600	+08	600	600	800	850
D0038	LEAD	OR	NA	9,307	15	07/24/79	MEAS	590	+02	540	580	660	730
D0072	LEAD	OR	NA	9,770	41	08/25/79	MEAS	570	+10	570	600	750	880
D0093	LEAD	OR	NA	10,069	20	09/13/79	MEAS	580	+10	580	600	790	860
D0109	UNL	BP	NA	10,446	72	10/10/79	MEAS	600	+09	600	600	820	860
D0118	UNL	RE	NA	10,532	0	10/24/79	MEAS	600	+10	600	600	780	880
R0154	LEAD	OR	NA	11,750	91	01/16/80	MEAS	600	+09	600	600	860	920
R0157	LEAD	OR	NA	11,795	3	01/17/80	MEAS	590	+09	590	600	830	920
R0165	LEAD	OR	NA	11,831	6	01/22/80	MEAS	590	+08	590	590	810	900
R0173	UNL	BP	NA	11,877	22	01/25/80	MEAS	550	+08	580	580	740	860
R0178	UNL	OR	NA	11,909	0	01/28/80	MEAS	590	+09	590	590	870	920
R0184	UNL	OR	NA	12,118	17	01/30/80	MEAS	600	+08	600	600	810	880
R0189	UNL	OR	NA	12,331	18	02/01/80	MEAS	560	+04	600	610	760	890
R0216	UNL	OR	NA	12,612	19	02/15/80	MEAS	600	+08	600	600	750	820
R0222	UNL	OR	NA	12,823	20	02/19/80	MEAS	550	+08	550	550	730	800

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9401	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
R0232	UNL	OR	NA	13,860	61	02/25/80	MEAS	600	+12	600	600	800	900
R0244	UNL	OR	NA	14,894	65	03/04/80	MEAS	550	+08	550	560	770	820
R0247	UNL	RE	NA	14,934	0	03/05/80	MEAS	550	+08	550	550	750	800

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
INSP				9,287		07/27/79	SPEC	600	+08				
							MEAS	600	+11	600	680	760	1060
D0057	UNL	OR	NA	9,287	0	08/09/79	MEAS	630	+08	630	660	880	1040
D0059	UNL	OR	NA	9,319	0	08/13/79	MEAS	600	+09	600	650	700	820
D0077	UNL	OR	NA	9,462	0	08/29/79	MEAS	620	+07	620	670	840	1100
D0083	UNL	BP	NA	9,486	0	09/04/80	MEAS	620	+10	620	660	820	1070
D0092	UNL	BP	NA	9,567	0	09/13/79	MEAS	600	+09	600	680	800	1060
D0095	UNL	BP	NA	9,591	0	09/14/79	MEAS	620	+10	620	660	800	1100
D0100	LEAD	OR	NA	9,814	39	09/25/79	MEAS	680	+10	680	680	980	1080
D0119	LEAD	OR	NA	10,174	21	10/26/79	MEAS	620	+10	620	680	900	1100
D0126	LEAD	OR	NA	10,407	20	11/12/79	MEAS	660	+09	660	680	940	1050
D0136	LEAD	OR	NA	10,678	19	12/01/79	MEAS	670	+09	670	690	1000	1200
D0142	LEAD	OR	NA	10,922	18	12/10/79	MEAS	650	+08	650	670	900	1085
D0148	LEAD	OR	NA	11,186	17	01/14/80	MEAS	620	+09	620	660	890	1060
D0151	LEAD	OR	NA	11,223	0	01/15/80	MEAS	640	+11	640	670	930	1090
D0163	LEAD	OR	NA	11,256	0	01/21/80	MEAS	630	+08	630	660	920	1090
D0169	LEAD	OR	NA	11,593	37	01/24/80	MEAS	640	+08	640	660	950	1180
D0174	LEAD	OR	NA	11,841	4	01/26/80	MEAS	630	+10	630	670	960	1200
D0190	UNL	BP	NA	11,876	21	02/01/80	MEAS	620	+08	640	660	840	1040
R0200	UNL	OR	NA	11,946	0	02/07/80	MEAS	660	+10	660	680	900	1060
R0212	UNL	OR	NA	12,133	19	02/14/80	MEAS	600	+10	600	650	800	980
R0219	UNL	OR	NA	12,347	19	02/18/80	MEAS	600	+08	600	650	800	1080
R0224	UNL	OR	NA	12,621	20	02/20/80	MEAS	620	+08	620	650	850	1050

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9402	1979	FORD	THND	302	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
R0230	UNL	OR	NA	12,902	41	02/23/80	MEAS	600	+08	600	650	800	1100
R0243	UNL	OR	NA	13,930	69	02/29/80	MEAS	650	+08	650	650	900	1100
R0246	UNL	OR	NA	14,940	71	03/05/80	MEAS	600	+08	600	640	880	1050
R0252	UNL	RE	NA	14,990	0	03/07/80	MEAS	640	+08	640	650	880	1050

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

										-PROPANE ENRICHMENT -			
										- DRIVE —		-NEUTRAL -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	W/OUT	WITH	W/OUT	WITH
INSP				6,488		05/17/79	SPEC	500	+20				
							MEAS	500	+21	500	560	600	700
D0004	UNL	OR	NA	6,818	7	05/22/79	MEAS	500	+20	500	580	660	780
D0006	UNL	OR	NA	6,857	2	05/23/79	MEAS	500	+20	500	540	620	700
D0007	UNL	OR	NA	6,886	0	05/25/79	MEAS	500	+20	500	550	630	710
D0009	UNL	BP	NA	6,950	0	06/08/79	MEAS	530	+20	530	540	650	710
D0011	UNL	BP	NA	7,014	6	06/13/79	MEAS	520	+20	520	540	640	700
D0014	UNL	BP	NA	7,069	0	06/23/79	MEAS	460	+21	460	520	500	630
D0049	LEAD	OR	NA	7,449	28	08/03/79	MEAS	520	+18	520	560	610	700
D0073	LEAD	OR	NA	7,767	27	08/25/79	MEAS	510	+17	510	550	650	740
D0088	LEAD	OR	NA	7,956	12	09/11/79	MEAS	560	+20	560	630	690	750
D0098	LEAD	OR	NA	8,161	13	09/19/79	MEAS	500	+21	500	560	600	740
D0103	LEAD	OR	NA	8,429	14	09/28/79	MEAS	500	+22	500	560	640	750
D0111	LEAD	OR	NA	8,618	12	10/11/79	MEAS	550	+21	550	550	700	750
D0121	LEAD	OR	NA	8,837	13	10/29/79	MEAS	500	+21	620	630	800	900
D0127	LEAD	OR	NA	9,017	13	11/12/79	MEAS	540	+22	540	570	670	760
D0135	LEAD	OR	NA	9,244	14	11/26/79	MEAS	525	+22	540	560	680	750
D0141	LEAD	OR	NA	9,430	12	12/10/79	MEAS	540	+21	540	560	680	750
D0155	LEAD	OR	NA	9,856	19	01/16/80	MEAS	510	+20	510	550	620	760
D0158	LEAD	OR	NA	9,889	0	01/17/80	MEAS	520	+20	520	540	630	740
D0160	LEAD	OR	NA	9,922	0	01/18/80	MEAS	480	+20	480	500	550	650
D0164	UNL	BP	NA	9,961	19	01/21/80	MEAS	520	+20	530	540	670	750
R0168	UNL	OR	NA	9,993	0	01/24/80	MEAS	530	+19	530	540	680	750

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9403	1979	OLDS	CUTL	260	OXID.

										-PROPANE ENRICHMENT -			
										- DRIVE —		-NEUTRAL -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	W/OUT	WITH	W/OUT	WITH
R0176	UNL	OR	NA	10,220	16	01/26/80	MEAS	540	+18	540	550	680	760
R0182	UNL	OR	NA	10,490	16	01/29/80	MEAS	530	+19	530	550	670	750
R0187	UNL	OR	NA	10,739	15	01/31/80	MEAS	550	+20	540	550	700	760
R0206	UNL	OR	NA	10,931	16	02/09/80	MEAS	530	+20	530	550	680	750
R0231	UNL	OR	NA	12,015	62	02/25/80	MEAS	550	+20	550	550	650	750
R0245	UNL	OR	NA	13,046	61	03/05/80	MEAS	550	+20	550	580	650	700
R0251	UNL	RE	NA	13,114	0	03/07/80	MEAS	550	+20	550	550	650	760

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
INSP				7,231		05/15/79	SPEC	500	+20				
							MEAS	480	+20	480	520	580	620
D0018	UNL	OR	NA	7,283	0	06/27/79	MEAS	580	+20	580	520	700	824
D0020	UNL	OR	NA	7,315	5	06/28/79	MEAS	560	+21	560	620	680	840
D0022	UNL	OR	NA	7,349	2	06/29/79	MEAS	540	+21	540	640	700	860
D0027	UNL	BP	NA	7,380	0	07/07/79	MEAS	520	+21	520	580	700	810
D0031	UNL	BP	NA	7,437	6	07/10/79	MEAS	570	+21	580	610	740	840
D0033	UNL	BP	NA	7,492	0	07/11/79	MEAS	525	+18	530	530	650	750
D0054	LEAD	OR	NA	7,955	40	08/08/79	MEAS	550	+21	550	580	690	770
D0082	LEAD	OR	NA	8,266	24	08/31/79	MEAS	530	+18	530	590	640	810
D0094	LEAD	OR	NA	8,358	12	09/13/79	MEAS	550	+21	550	580	690	775
D0101	LEAD	OR	NA	8,528	10	09/25/79	MEAS	560	+20	560	580	720	780
D0107	LEAD	OR	NA	8,727	15	10/05/79	MEAS	520	+21	520	540	680	780
D0113	LEAD	OR	NA	8,897	11	10/12/79	MEAS	580	+20	580	620	740	860
D0122	LEAD	OR	NA	9,213	16	10/30/79	MEAS	520	+22	520	570	680	780
D0124	LEAD	OR	NA	9,363	14	11/07/79	MEAS	520	+20	520	580	650	800
D0140	LEAD	OR	NA	9,627	14	12/07/79	MEAS	600	+20	600	620	740	840
D0146	LEAD	OR	NA	9,842	12	12/15/79	MEAS	550	+20	560	590	730	830
D0156	LEAD	OR	NA	10,098	9	01/16/80	MEAS	530	+19	530	560	650	780
D0159	LEAD	OR	NA	10,134	0	01/17/80	MEAS	530	+18	530	560	650	800
D0172	UNL	BP	NA	10,165	18	01/25/80	MEAS	530	+18	530	550	660	790
R0177	UNL	OR	NA	10,199	0	01/26/80	MEAS	510	+19	510	570	670	820
R0180	UNL	OR	NA	10,385	16	01/28/80	MEAS	540	+17	540	570	720	800

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9404	1979	OLDS	CUTL	260	OXID.

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE —		-NEUTRAL -	
										W/OUT	WITH	W/OUT	WITH
R0186	UNL	OR	NA	10,633	16	01/31/80	MEAS	550	+20	540	550	650	750
R0205	UNL	OR	NA	10,864	15	02/09/80	MEAS	520	+20	520	550	650	750
R0211	UNL	OR	NA	11,082	16	02/14/80	MEAS	530	+20	530	550	650	760
R0233	UNL	OR	NA	12,119	67	02/25/80	MEAS	550	+20	550	620	650	780
R0248	UNL	OR	NA	13,149	61	03/06/80	MEAS	550	+20	550	580	700	750
R0253	UNL	RE	NA	13,179	0	03/07/80	MEAS	550	+20	550	600	700	850

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
INSP				4,044		05/16/79	SPEC	640	+99				
							MEAS	650	+99	650	630	900	980
D0021	UNL	OR	OR	4,179	5	06/28/79	MEAS	700	+99	700	700	1040	1040
D0023	UNL	OR	OR	4,210	0	06/29/79	MEAS	720	+99	720	720	1020	1020
D0026	UNL	OR	OR	4,282	0	07/05/79	MEAS	650	+99	650	650	1000	1000
D0028	UNL	BP	OR	4,319	8	07/07/79	MEAS	650	+99	650	650	950	950
D0030	UNL	BP	OR	4,345	0	07/09/79	MEAS	650	+99	650	650	1020	1020
D0032	UNL	BP	OR	4,373	0	07/10/79	MEAS	650	+99	690	690	1040	1040
D0065	LEAD	OR	OR	4,731	58	08/15/79	MEAS	680	+99	680	680	1020	1110
D0081	LEAD	OR	OR	4,902	14	08/31/79	MEAS	670	+99	670	670	1000	1080
D0090	LEAD	OR	OR	5,034	13	09/12/79	MEAS	670	+99	670	670	1050	1050
D0104	LEAD	OR	OR	5,250	16	09/28/79	MEAS	670	+99	670	680	960	1080
D0108	LEAD	OR	OR	5,466	15	10/05/79	MEAS	680	+99	660	660	1080	1080
D0110	LEAD	OR	OR	5,719	17	10/11/79	MEAS	680	+99	680	680	1000	1060
D0123	LEAD	OR	OR	5,954	13	10/30/79	MEAS	660	+99	660	660	1020	1040
D0133	LEAD	OR	OR	6,050	13	11/17/79	MEAS	660	+99	660	660	1120	1120
D0139	LEAD	OR	OR	6,242	28	12/06/79	MEAS	700	+99	700	700	980	1080
D0144	LEAD	OR	OR	6,637	16	12/15/79	MEAS	660	+99	660	660	1050	1060
D0161	LEAD	OR	OR	6,875	7	01/18/80	MEAS	640	+99	640	640	990	1050
D0166	LEAD	OR	OR	6,944	4	01/22/80	MEAS	660	+99	650	650	1000	1060
D0196	LEAD	OR	OR	7,057	17	02/05/80	MEAS	680	+99	680	720	1150	1300
D0228	LEAD	OR	OR	7,152	5	02/23/80	MEAS	670	+99	670	670	1050	1100
R0235	LEAD	BP	OR	7,184	10	02/26/80	MEAS	650	+99	650	650	1050	1200

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9405	1979	MERC	MARQ	351	3 WAY

										-PROPANE ENRICHMENT -			
										- DRIVE —		-NEUTRAL -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	W/OUT	WITH	W/OUT	WITH
R0237	LEAD	BP	OR	7,213	0	02/27/80	MEAS	650	+99	650	650	1020	1100
R0240	UNL	BP	OR	7,241	18	02/28/80	MEAS	680	+99	680	700	1050	1100
R0241	UNL	BP	OR	7,269	0	02/29/80	MEAS	650	+99	650	650	1050	1100
R0249	UNL	BP	NW	7,302	0	03/06/80	MEAS	700	+99	700	700	1100	1140
R0254	UNL	BP	NW	7,329	0	03/10/80	MEAS	660	+99	660	660	1050	1100
R0260	UNL	OR	NW	7,358	0	03/11/80	MEAS	650	+99	650	650	1000	1100
R0261	UNL	OR	OR	7,390	16	03/12/80	MEAS	680	+99	680	680	1050	1150
R0264	UNL	OR	OR	7,629	13	03/14/80	MEAS	650	+99	650	650	1050	1150
R0266	UNL	OR	NW	7,666	0	03/17/80	MEAS	700	+99	700	760	1100	1300
R0269	UNL	OR	OR	7,910	20	03/19/80	MEAS	660	+99	660	720	1060	1100
R0272	UNL	OR	NW	7,941	0	03/21/80	MEAS	650	+99	650	680	1000	1100
R0280	UNL	OR	OR	8,144	15	03/28/80	MEAS	650	+99	650	650	1000	1100
R0282	UNL	OR	NW	8,174	0	03/31/80	MEAS	660	+99	660	660	1000	1080
R0285	UNL	OR	OR	8,473	23	04/03/80	MEAS	650	+99	650	650	980	1100
R0286	UNL	OR	NW	8,504	9	04/07/80	MEAS	660	+99	660	680	1000	1100
R0293	UNL	OR	NW	9,369	52	04/30/80	MEAS	650	+99	650	650	1050	1100
R0297	UNL	OR	OR	9,543	4	05/13/80	MEAS	700	+99	700	700	1050	1150
R0299	UNL	BP	OR	9,600	0	05/19/80	MEAS	700	+99	700	700	1050	1100
R0300	UNL	BP	NW	9,634	0	05/20/80	MEAS	700	+99	700	700	1050	1100
R0303	UNL	RE	OR	9,735	16	05/28/80	MEAS	680	+99	680	700	1050	1100
R0306	UNL	RE	NW	9,846	0	06/02/80	MEAS	680	+99	680	680	1050	1100

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
INSP				5,795		05/10/79	SPEC MEAS	900 820	+12 +12	650	670	820	840
D0039	UNL	OR	OR	5,795	0	07/25/79	MEAS	850	+14	780	780	920	1170
D0044	UNL	OR	OR	5,831	0	07/28/79	MEAS	900	+12	780	860	900	1170
D0055	UNL	OR	OR	5,907	0	08/09/79	MEAS	880	+12	750	860	880	1200
D0067	UNL	BP	OR	6,002	5	08/16/79	MEAS	890	+11	770	840	890	1180
D0078	UNL	BP	OR	6,075	0	08/30/79	MEAS	920	+12	770	850	920	1200
D0080	UNL	BP	OR	6,101	0	08/31/79	MEAS	860	+11	760	850	860	1170
D0091	LEAD	OR	OR	6,371	26	09/12/79	MEAS	860	+12	800	880	1060	1300
D0096	LEAD	OR	OR	6,597	13	09/17/79	MEAS	900	+12	750	830	900	1100
D0099	LEAD	OR	OR	6,853	12	09/24/79	MEAS	880	+13	780	850	880	1140
D0106	LEAD	OR	OR	7,036	13	10/04/79	MEAS	860	+10	760	840	860	1100
D0120	LEAD	OR	OR	7,275	14	10/27/79	MEAS	900	+12	760	840	900	1140
D0134	LEAD	OR	OR	7,516	12	11/21/79	MEAS	900	+11	780	850	900	1160
D0138	LEAD	OR	OR	7,641	13	12/04/79	MEAS	840	+12	820	880	1000	1220
D0143	LEAD	OR	OR	7,934	17	12/11/79	MEAS	950	+11	800	860	950	1200
D0150	LEAD	OR	OR	8,144	3	01/14/80	MEAS	810	+11	840	910	1010	1500
D0153	LEAD	OR	OR	8,174	4	01/15/80	MEAS	1000	+12	810	880	1000	1300
R0175	LEAD	BP	OR	8,220	4	01/26/80	MEAS	900	+12	830	890	1100	1490
R0179	LEAD	BP	OR	8,250	0	01/28/80	MEAS	990	+12	820	880	990	1220
R0183	UNL	BP	OR	8,280	14	01/29/80	MEAS	850	+12	830	900	1070	1310
R0185	UNL	BP	OR	8,309	0	01/30/80	MEAS	980	+12	800	880	980	1200
R0193	UNL	BP	NW	8,339	0	02/04/80	MEAS	850	+15	820	880	1050	1650

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9406	1979	VOLV	245	130	3 WAY

TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	-PROPANE ENRICHMENT - - DRIVE — W/OUT	WITH	-NEUTRAL - W/OUT	WITH
R0198	UNL	BP	NW	8,380	0	02/06/80	MEAS	850	+12	850	1000	1100	2000
R0202	UNL	OR	NW	8,406	0	02/08/80	MEAS	830	+12	900	980	1000	1080
R0207	UNL	OR	OR	8,445	0	02/09/80	MEAS	900	+13	760	820	900	1200
R0213	UNL	OR	OR	8,730	30	02/14/80	MEAS	850	+12	800	830	1050	1300
R0215	UNL	OR	NW	8,760	0	02/15/80	MEAS	850	+12	800	850	1050	1300
R0218	UNL	OR	OR	8,927	15	02/18/80	MEAS	830	+12	800	900	1000	1300
R0221	UNL	OR	NW	8,958	0	02/19/80	MEAS	930	+12	750	900	930	1300
R0225	UNL	OR	OR	9,164	30	02/21/80	MEAS	850	+12	800	850	1050	1250
R0227	UNL	OR	NW	9,212	0	02/23/80	MEAS	850	+12	800	900	1050	1300
R0236	UNL	OR	OR	9,503	20	02/26/80	MEAS	850	+12	800	900	1050	1300
R0238	UNL	OR	NW	9,532	0	02/27/80	MEAS	820	+12	800	880	1000	1300
R0255	UNL	OR	OR	10,562	65	03/10/80	MEAS	850	+12	820	900	1050	1150
R0259	UNL	OR	NW	10,610	5	03/11/80	MEAS	850	+12	800	880	1050	1300
R0265	UNL	OR	OR	11,642	56	03/17/80	MEAS	840	+12	800	870	1010	1300
R0268	UNL	OR	NW	11,672	0	03/18/80	MEAS	880	+12	800	900	1080	1400
R0271	UNL	BP	OR	11,701	0	03/20/80	MEAS	820	+11	780	820	1000	1120
R0273	UNL	BP	NW	11,728	0	03/21/80	MEAS	850	+12	800	900	1050	1250
R0275	UNL	RE	OR	11,753	0	03/25/80	MEAS	850	+11	800	850	1050	1250
R0279	UNL	RE	NW	11,847	14	03/27/80	MEAS	880	+11	820	840	1080	1210

APPENDIX I (CONT'D)

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

										-PROPANE ENRICHMENT -			
										- DRIVE —		-NEUTRAL -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	W/OUT	WITH	W/OUT	WITH
INSP				5,182		07/27/79	SPEC	850	+14				
							MEAS	830	+13	830	840	1100	1200
D0043	UNL	OR	OR	5,182	0	07/27/79	MEAS	800	+13	810	830	1000	1060
D0056	UNL	OR	OR	5,271	0	08/09/79	MEAS	850	+15	850	850	1100	1200
D0060	UNL	OR	OR	5,299	0	08/13/79	MEAS	820	+14	820	820	1050	1150
D0064	UNL	BP	OR	5,330	0	08/14/79	MEAS	820	+14	820	840	1080	1180
D0075	UNL	BP	OR	5,384	0	08/27/79	MEAS	840	+14	840	850	1130	1240
D0076	UNL	BP	OR	5,408	0	08/29/79	MEAS	850	+13	830	850	1110	1220
D0097	LEAD	OR	OR	5,646	14	09/18/79	MEAS	800	+13	800	840	1100	1200
D0105	LEAD	OR	OR	5,870	26	10/03/79	MEAS	800	+14	800	820	1040	1160
D0112	LEAD	OR	OR	6,121	12	10/12/79	MEAS	800	+14	800	820	1050	1140
D0131	LEAD	OR	OR	6,341	15	11/13/79	MEAS	840	+14	840	850	1100	1200
D0137	LEAD	OR	OR	6,606	13	12/03/79	MEAS	810	+14	810	830	1120	1220
D0145	LEAD	OR	OR	6,831	14	12/15/79	MEAS	810	+14	810	830	1050	1150
D0147	LEAD	OR	OR	7,004	0	12/27/79	MEAS	850	+13	850	860	1120	1240
D0149	LEAD	OR	OR	7,024	0	01/14/80	MEAS	820	+12	820	830	1200	1350
D0152	LEAD	OR	OR	7,057	3	01/15/80	MEAS	820	+13	820	850	1100	1200
D0167	LEAD	OR	OR	7,369	28	01/22/80	MEAS	820	+14	820	840	1100	1200
D0170	LEAD	OR	OR	7,589	4	01/24/80	MEAS	840	+12	870	890	1140	1300
D0188	LEAD	OR	OR	7,959	31	01/31/80	MEAS	850	+13	830	840	1200	1250
R0195	LEAD	BP	OR	8,006	0	02/05/80	MEAS	900	+13	900	920	1300	1350
R0197	LEAD	BP	OR	8,034	0	02/06/80	MEAS	900	+13	900	950	1200	1400
R0201	UNL	BP	OR	8,062	17	02/07/80	MEAS	900	+13	900	910	1300	1380

CATALYST DETERIORATION / REJUVENATION

LISTING OF PROPANE ENRICHMENT RESULTS BY INDIVIDUAL VEHICLE

VEH. NO.	MODL YEAR	MAKE	MODL	CID	CONV.
9407	1979	CHEV	MONZ	151	3 WAY

										-PROPANE ENRICHMENT -			
										- DRIVE —		-NEUTRAL -	
TEST NO.	FUEL	CONV	O2 SENS	ODOM	GAL.	DATE		IDLE RPM	TIMING	W/OUT	WITH	W/OUT	WITH
R0203	UNL	BP	OR	8,090	0	02/08/80	MEAS	840	+12	840	860	1300	1380
R0214	UNL	BP	NW	8,125	0	02/15/80	MEAS	850	+16	850	900	1150	1400
R0217	UNL	BP	NW	8,155	0	02/18/80	MEAS	880	+14	880	910	1250	1400
R0220	UNL	OR	NW	8,183	0	02/19/80	MEAS	850	+14	850	900	1150	1300
R0223	UNL	OR	OR	8,215	12	02/20/80	MEAS	850	+14	850	850	1150	1250
R0229	UNL	OR	OR	8,513	15	02/23/80	MEAS	850	+14	850	850	1150	1250
R0234	UNL	OR	NW	8,550	0	02/26/80	MEAS	850	+14	850	850	1150	1250
R0239	UNL	OR	OR	8,763	14	02/28/80	MEAS	850	+14	850	850	1150	1200
R0242	UNL	OR	NW	8,794	0	02/29/80	MEAS	850	+14	850	850	1050	1150
R0250	UNL	OR	OR	9,002	14	03/06/80	MEAS	850	+14	850	860	1200	1250
R0258	UNL	OR	NW	9,039	0	03/11/80	MEAS	850	+14	850	860	1150	1300
R0262	UNL	OR	OR	9,240	14	03/13/80	MEAS	850	+14	850	900	1150	1300
R0263	UNL	OR	NW	9,277	0	03/14/80	MEAS	850	+14	850	850	1150	1220
R0267	UNL	OR	OR	10,305	52	03/18/80	MEAS	840	+12	840	860	1120	1300
R0270	UNL	OR	NW	10,335	0	03/19/80	MEAS	840	+13	840	860	1060	1180
R0274	UNL	OR	OR	11,365	57	03/24/80	MEAS	830	+14	830	850	1150	1250
R0276	UNL	OR	NW	11,392	0	03/25/80	MEAS	840	+14	840	650	1120	1250
R0281	UNL	BP	OR	11,422	0	03/31/80	MEAS	850	+14	850	880	1100	1250
R0283	UNL	BP	NW	11,450	0	04/01/80	MEAS	840	+14	840	840	1150	1250
R0287	UNL	RE	OR	11,482	10	04/15/80	MEAS	840	+14	840	850	1100	1160
R0288	UNL	RE	NW	11,514	0	04/16/80	MEAS	850	+14	850	850	1150	1260

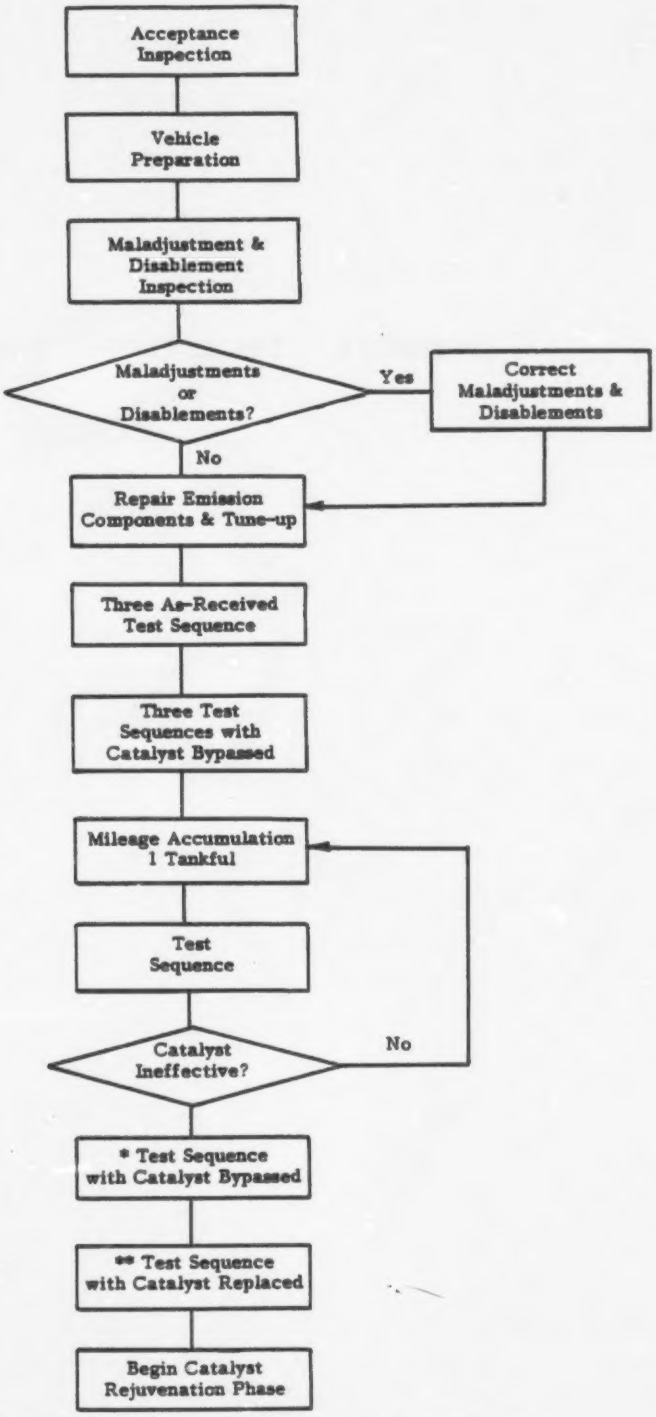
APPENDIX J

LISTING OF LEADED FUEL ANALYSES

Sample Date	Reid Vapor Pressure	Lead Content (Grams/Gallon)
6 Sep 1979	9.4	.84
10 Sep 1979	9.8	.75
17 Sep 1979	9.9	1.22
24 Sep 1979		.90
1 Oct 1979	8.5	1.49
2 Oct 1979	9.3	1.32
10 Oct 1979	9.6	1.32
15 Oct 1979	10.7	1.14
23 Oct 1979	9.9	1.16
8 Nov 1979	10.3	.54
12 Nov 1979	10.0	.43
19 Nov 1979		.45
26 Nov 1979		.50
3 Dec 1979		1.30
10 Dec 1979		1.25

APPENDIX K - VEHICLE FLOW DIAGRAMS

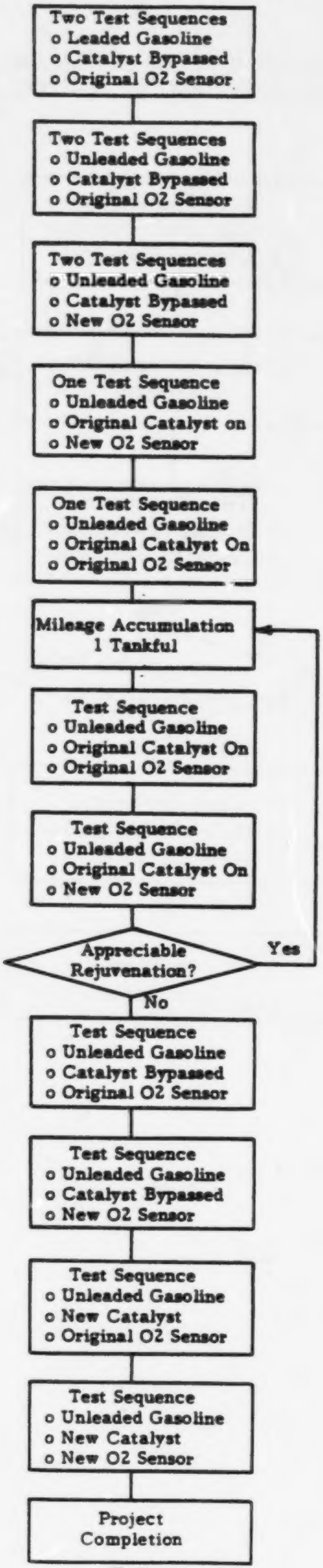
VEHICLE FLOW DIAGRAM
CATALYST DETERIORATION - ALL VEHICLES


Acceptance Inspection
Vehicle Preparation
Maladjustment & Disablement Inspection
Maladjustments or Disablements?
Yes
Correct Maladjustments & Disablements
No
Repair Emission Components & Tune-up
Three As-Received Test Sequence
Three Test Sequences with Catalyst Bypassed
Mileage Accumulation 1 Tankful
Test Sequence
Catalyst Ineffective?
No
* Test Sequence with Catalyst Bypassed
** Test Sequence with Catalyst Replaced
Begin Catalyst Rejuvenation Phase

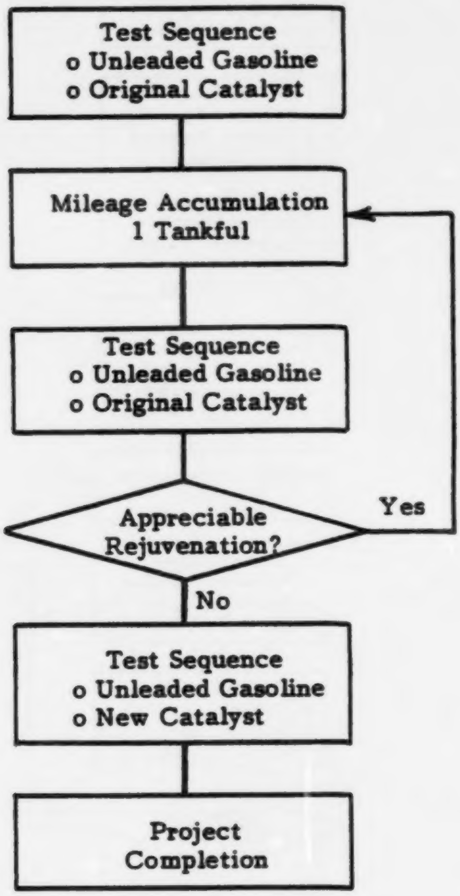
*Work effort modification precluded this sequence for 3-way catalyst vehicles

**Work effort modification precluded this sequence if not already complete

VEHICLE FLOW DIAGRAM
CATALYST REJUVENATION - 3 WAY


Two Test Sequences
o Leaded Gasoline
o Catalyst Bypassed
o Original O2 Sensor
Two Test Sequences
o Unleaded Gasoline
o Catalyst Bypassed
o Original O2 Sensor
Two Test Sequences
o Unleaded Gasoline
o Catalyst Bypassed
o New O2 Sensor
One Test Sequence
o Unleaded Gasoline
o Original Catalyst on
o New O2 Sensor
One Test Sequence
o Unleaded Gasoline
o Original Catalyst On
o Original O2 Sensor
Mileage Accumulation
1 Tankful
Test Sequence
o Unleaded Gasoline
o Original Catalyst On
o Original O2 Sensor
Test Sequence
o Unleaded Gasoline
o Original Catalyst On
o New O2 Sensor
Appreciable
Rejuvenation?
Yes
No
Test Sequence
o Unleaded Gasoline
o Catalyst Bypassed
o Original O2 Sensor
Test Sequence
o Unleaded Gasoline
o Catalyst Bypassed
o New O2 Sensor
Test Sequence
o Unleaded Gasoline
o New Catalyst
o Original O2 Sensor
Test Sequence
o Unleaded Gasoline
o New Catalyst
o New O2 Sensor
Project
Completion

VEHICLE FLOW DIAGRAM
CATALYST REJUVENATION - OXIDATION


Test Sequence
o Unleaded Gasoline
o Original Catalyst
Mileage Accumulation
1 Tankful
Test Sequence
o Unleaded Gasoline
o Original Catalyst
Appreciable
Rejuvenation?
Yes
No
Test Sequence
o Unleaded Gasoline
o New Catalyst
Project
Completion